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Corporate Social Performance and Corporate Financial Performance: Theory and Empirical Evidence from the Recent Global Financial Crisis

by

Hien Thi Tran

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ABSTRACT

This thesis searches for the theoretical influence of corporate social performance (CSP) on corporate financial performance and to provide empirical evidence for this effect from the recent global crisis. Hence, the author investigates how and why CSP influences financial performance from the international perspective with a global dataset of Fortune World's Most Admired Companies in three distinctive studies.

The first study develops a model on how and why independent directors using CSP disclosure affect profitability. The model is built on Schmidt and Keil's (2013) theory of the conditions and mechanisms that make resources valuable to a firm. The regression results support the proposed model in a way that the synergy of independent directors using CSP disclosure probably increases profitability. The second study tests the agency theory on the impact of executive remuneration combining with CSR disclosure on profitability. The study finds that a combination of executive remuneration and CSP disclosure are likely to improve profitability; however, higher salary and stock might be the drivers that affect executives to disclose more information on CSP, which enhances the corporate reputation in CSP. The third study tests the theory of transaction costs in a model on the influence of CSR on profitability intervened by corporate governance. The data support the model, suggesting that well-informed and good governance is the condition for a positive influence of CSP on financial performance.

The novel contributions of the thesis are as follows. From an international perspective and use of a global-level dataset, the thesis confirms and extents the global theories related to corporate governance, and opens up the new research avenues. Empirically, this thesis is the first that proposes and tests a model on how and why independent directors using CSP disclosure affects profitability, underpinned by Schmidt and Keil's (2013) function. Methodologically, the studies used the two measures of CSP in terms of disclosure and reputational rank; the structures of two simultaneous equations were used to fit the data. Further, the problem of endogeneity was addressed in the studies.

At the firm level, the thesis implies that first, the strategy in which independent directors use CSP is likely to improve financial performance due to the willingness to pay for the increased resources and social capital of their firm. Second, the study results raise the concerns on managerial manipulation of CSP disclosure due to agency problems and information asymmetry problems, thus recommending independent directors' role of monitoring CSP. Third, the study suggests that positive effect of CSP on financial performance is conditional on the intervention of transparent and good governance. Moreover, the thesis reveals the advantages of the two coordinating forms of economic activities from the recent financial crisis, one based on networks and the other on governance hierarchy. These should be macro policy considerations during periods of economic recession when the market mechanism might fail.

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DECLARATION OF AUTHORSHIP

I, Hien Thi Tran,

declare that the thesis entitled

Corporate Social Performance and Corporate Financial Performance: Theory and Empirical Evidence from the Recent Financial Crisis

and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- This work was done wholly while in candidature for a research degree at this University;
- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- Where I have consulted the published work of others, this is always clearly attributed;
- Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- Where the thesis is based on the work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- Parts of this work may have been presented at the conferences and not yet published before submission.

Signed: .....

Date:.....

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Abbreviations

CSR	Corporate social responsibility
CSP	Corporate social performance
ESG	Environmental, social and governance [disclosure]
fe	Fixed-effects
FWMA	Fortune World's Most Admired [companies]
OECD	The Organisation for Economic Co-operation and Development
re	Random-effects
ROA	Return on assets
ROE	Return on equity
SEM	Structural equation modelling
DV	Dependent variables
VIF	Variance inflation factor
2SLS	Two-stage least square

Chapter 1: Introduction

1.1 Motivations

The twenty-first century is seen as the century of corporate governance theory development (Tricker, 2009). However, corporate governance theories are having difficulty in keeping pace with the practical demands for governance codes and practices in daily business.

Smith (1776) was the first scholar who discussed the separation of ownership and control in a firm. Later, Berle and Means (1932) produced the first-ever study on corporate governance. After this milestone work, there was a break in corporate governance theory evolution (Tricker, 2009) until the 1970s when the role of a firm was questioned. The traditional obligation of corporations was towards shareholders wealth rather than CSR (Friedman, 1970). However, society demanded that management should imbed CSR into their business activities (Freeman, 1984).

Over recent decades there have been vigorous debates between two opposing schools of thought about CSR, shareholder value maximisation and social value creation. Since the 1990s there has been a shift in CSR thinking from fulfilling societal obligations through philanthropy to a more strategic level that has attempted to tie social initiatives to corporate objectives (Banerjee, 2006). After the Cadbury report issued in 1992, there was a proliferation of guidelines and codes on corporate governance including CSR-driven principles developed and adopted by companies.

The financial crisis that began in late 2007 created the worst financial dislocation since the Great Depression of the 1930s (Stewart, 2008). The crisis hit the viability of banks and other financial institutions throughout the world, created transnational risks and defaults. The collapse of giant

companies and the adverse impact of the global financial crisis raised new concerns about the role of corporations in incorporating social and environmental issues to address new millennial challenges.

One explanation could be that during the economic downturn, with budget constraints, firms probably allocate resources to their most urgent needs to minimize costs, cutting back CSR. However, among the possible explanations for corporate financial resilience in uncertain market conditions, there might be a reason that related to CSR. It could be that the adoption of CSR in daily business strategy enables firms to be buoyant in an atmosphere of financial turmoil because the company can gain stakeholders' goodwill. In the other words, during the recession business and society become more dependent on each other.

In academia, the debate on the influence of CSR on financial performance remains inconclusive. Since the publication of the book Social Responsibility of the Businessman (Bowen, 1953), there has been a shift in terminology from the social responsibility of a business towards CSR. This construct, though, relates to a variety of theories and approaches which are controversial, complex and unclear (Garriga and Mele, 2004).

Friedman (1970) insists that there is only one social responsibility of businesses – to use their resources to engage in activities designed to increase profit. The academic debate surrounding the relationship between CSP and financial performance was heightened when Aupperle *et al*. (1985) found no significant correlation between a strong orientation to social responsibility and financial performance, concluding that it is 'neither beneficial nor harmful for a firm to fulfil a social contract'.

Since the late 1990s CSR has been associated with corporate governance literature, and its relationship with market outcomes has been made more explicit (Hart, 1995; Perrini *et al*., 2008). There has been a strong focus on how CSP is linked with financial performance by testing whether this

relationship follows a specific theory, or whether CSP may partially help to optimise any economic gains. A mixture of positive and negative effects have been found in the relationship between CSP and profitability (Margolis and Walsh, 2003). Such debates are still ongoing, and Jones (2004) indicates that the difficulty in identifying and quantifying CSR lies in the fact that CSR involves not only spending but also ethical behaviour of company management to the stakeholders.

The term *shared value,* first introduced in 2006 by Porter and Kramer, focuses on opportunities for gaining corporate competitive advantage by integrating CSR into corporate strategy. This strategy benefits both shareholders and stakeholders. The win-win solutions are in the intersection between the values of business and those of society; companies should stop thinking in terms of "corporate social responsibility" and start thinking in terms of *corporate social integration* (2006; Porter and Kramer, 2011).

However, the relationship between CSP and financial performance is not easily determined; there are conceptual and practical problems to be resolved. The concept of CSP is still suffering from a shortage of strong theoretical foundations and empirical validity (Gond, 2008). The theoretical model of the relationship between CSP and financial performance remains underdeveloped (Tricker, 2009). In addition, the roles of corporations in creating social values in modern society remains unclearly understood in contexts where there are considerable conflicts of interest between shareholders and stakeholders (Morck, 2014).

There has been an upward trend in conflicts of interest among different groups of stakeholders and types of shareholders. Firms have faced many varied challenges in developing and implementing CSR strategies to address the varying needs of their constituents. Important questions that have arisen are - How is CSR integrated into core business practices? How does CSR work in business strategies? How does CSR form part of good

corporate governance mechanisms? How do companies create shared value for society? What are the theoretical explanations on the mechanism underlying the impact of CSP on financial performance? These concerns are important to study.

1.2 Research Design

In this section, the author outlines the way in which the research was designed and the strategy employed in the pursuit of the research objectives and questions.

1.2.1 Research Objectives

The **overall objective** of this research project is to search for the effect of CSP on financial performance in a global context, and to provide empirical evidence for this effect from the recent financial crisis. To achieve this overall objective, the author investigates how and why CSP influences financial performance in three distinctive studies; each addresses a specific objective. For the **specific objectives**, the first study is aimed to test Schmidt and Keil's (2013) theoretical model of the conditions and mechanisms that make resources valuable to a firm and to propose an extension of the model related to CSR. The second study is to investigate how and why executive compensation influences CSP on financial performance. The third study examines how and why CSP affects financial performance on the condition of good governance practice in global firms.

It is noted that multinational enterprises have sought to communicate their CSR activities across their value chain and to build CSR reputation since the recent financial crisis. From the international perspective, this raises an issue on the economic rewards for good CSR practices – how and why CSR influences financial performance in these companies.

Against the backdrop of the financial crisis, this research project debates about the possible impact of the contemporary CSR practices on financial performance outcome when the factors of independent directors, executive remuneration and a good governance mechanism were in the models. These issues will be addressed by this research project.

In the literature, CSR is described as the behavioural decision to engage in socially responsible actions, while CSP specifically refers to measureable actions related to CSR (Okoye, 2009). Carroll (1979) pioneered the conceptual model of CSP that uses 'performance' as the operative term instead of 'responsibility', implying motivations with non-measurable characteristics. Wood (1991a), Wood (2010) revisits the historical concept of CSP stating that CSP has a set of structural categories that can be identified, described and measured. Following the literature, in this thesis, CSR is denoted as the *social and environmental responsibilities of firms to stakeholders*, while CSP is mentioned as the *performance of CSR*.

1.2.2 Research Philosophy

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed and used. Two major research philosophies are identified, *positivist* and *interpretivist* (Chen and Hirschheim, 2004). This research project adopts a *positivist* philosophy; following this is the objective approach to the development of the key research instrument.

Positivists believe that reality is stable and can be observed and described from an objective viewpoint (Hunt, 1991), i.e. without interfering with the phenomena being studied. It is contended that phenomena should be isolated and that observations should be repeatable. This often involves description of reality with variations in only a single independent variable so as to identify regularities in, and to form relationships between, some of the constituent elements of the social world. Predictions can be made

on the basis of previously observed and explained realities and their inter-relationships. This view is indirectly supported by Alavi and Carlson (1992) who found that empirical studies were *positivist* in their approach.

There has, however, been much debate on the issue of whether or not this *positivist* philosophy is entirely suitable for the social sciences (Hirschheim, 1985). Indeed, some of the difficulties experienced in quantitative research, such as the apparent inconsistency of results, may be attributed to the inappropriateness of the *positivist* philosophy for the domain. Likewise, a certain number of social constructs might be unmeasurable.

This research project is built within the *functionalist* paradigm of analysis. This school of thought treats the social world like the natural world. It represents a perspective firmly rooted in the *sociology of regulation*, and approaches its subject matter from an *objectivist* point of view (Burrell and Morgan, 1979).

Burrell and Morgan (1979) define the paradigm as set of basic meta-theoretical assumptions which are grouped together in a basic sociological framework. This framework can be used to find the philosophical underpinnings of any piece of research. However, there is a danger that the *functionalist* ideology is naively accepted as fact, and myths may be developed and nurtured if assumptions are not assessed (Hopper and Powell, 1985).

To avoid that danger, this research project starts with the assumptions about the nature of science. *Ontologically*, the phenomenon under investigation, the influence of CSP on financial performance, is assumed to be objectively external to individual consciousness. From a *positivist epistemological stance*, the nature of knowledge is seen as hard, real and tangible. Based on this position, this research accepts the fact that the influence of CSP on financial performance can be acquired. Following

Burrell and Morgan's scheme, the third implicit assumption, the *belief in human nature*, asserts that the relationship between human beings and their external circumstances is deterministic; in the other words, human beings and their experiences are conditioned by their environment.

The science and nature assumptions mentioned above underpin the methodology of this research project. With this in mind, the author investigates and obtains knowledge about the effect of CSP on financial performance and its underlying causes in a quantitative approach. Consequently, the boundaries of this research lie in its attempt to understand how CSP influences financial performance with the author's frame of reference.

Bearing in mind the pitfalls mentioned by Hopper and Powell (1985), this research is also aligned with Burrell and Morgan's (1979) fourth assumption of the nature of society which inclines to regulation rather than radical change. Following the *functionalist* paradigm (objective-regulation) and the *positivist* philosophy, this research approaches the subject matter using the relevant theories to develop hypotheses. Econometric models are developed to depict the hypothesised relationship between CSP and financial performance, influenced by interacting and intervening factors. After that, empirical data is used to test the hypotheses to see whether the theories are supported or refuted. Finally, based on the findings, the research gives implications, highlights its contributions and proposes the avenues for future research.

1.2.3 Research Strategy

Carroll (1999) defines CSR as a construct encompassing four *pillars*, namely the economic, legal, ethical and discretionary (or philanthropic) expectations that society has of organisations at a given point in time. CSP is defined by Aguilera *et al.* (2006) as corporate *actions* addressing issues which are beyond the scope of the firm's narrow economic,

technical and legal requirements. Carroll's (1999) definition focuses on the expectations of external stakeholder groups on firms, while Aguilera *et al.* (2006) emphasize firms' willingness to act voluntarily beyond norms and legal provisions. This research project apply both of the CSR definition, one from Carroll (1999) and the other from Aguilera *et al.* (2006).

Wood (2010) defines three analytical levels of CSR, namely the individual, organisational and institutional levels, in alignment with moral responsibility, social responsibility and economic responsibility respectively. This research project targets organisational (firm) levels of CSR from an international perspective. The research uses a market-driven approach rather than an ethical point of view to discuss the possibilities of using stakeholder approach in business strategies to improve financial performance. The research uses a company as a unit of analysis and links each company to the country where their head office was based and to the relevant years in the period of the recent global financial crisis.

A body of scholarly literature has been developed that addresses the challenges and opportunities that may exist as a result of the crisis. The events before the financial crisis, within the peak of the crisis (2008-2009) and when the global finance started to have the sign of recovery have provided an experience that most economists, practitioners, and policymakers never thought they would witness. The experience provided a great experimental dataset for empirical analysis.

This research project is split into three distinctive studies rooted in the idea of enlightened value maximisation (Jensen, 2001) as the major corporate goal. The three studies use quantitative data. The investigation employs a global-level dataset of a number of multinational corporations from 2005 to 2011to reflect the effect of the recent global financial crisis in the empirical findings. The STATA statistical software was used for the data modelling.

The study uses a dataset of global firms at firm-level and splits the dataset into three scenarios: before the global financial crisis (2005-2007); when the crisis was at its peak (2008-2009); and during the recovery years (2010-2011). Employing pre-crisis data allows for an unbiased assessment (Hoorn, 2015). The crucial question raised is whether companies implemented CSR initiatives with the same intensity in each scenario and whether the influence of CSR on financial performance changed in each scenario.

The next section reports a summary of the research issues, the predicted findings and the expected contributions of each of the studies.

1.2.3.1 First study

This study proposes and tests a model of how and why independent directors use CSP in the form of social disclosure to improve profitability. The proposed model is built on Schmidt and Keil's (2013) theoretical model of the conditions and mechanisms that make resources valuable to a firm. Based on this proposed model, the study examines whether the resource of independent directors in combination with networks of stakeholders realistically contribute to financial performance of the global corporations. Specifically, the study empirically investigates how and why a model that combines independent directors with CSR disclosure affects profitability. It is noticed that there is a transformation from the social value of independent directors and their stakeholder networks though CSR to financial value; this change is viewed as one of the indicators of the effectiveness of the independent directors.

The research question in this study is *how and why independent directors using CSR is likely to result to increased profitability*. The research question was addressed by drawing on the social network theory, resource dependence theory (Pfeffer and Salancik, 1978) and agency

theory (Jensen and Meckling, 1976). Underpinned by these theories and the Schmidt and Keil's (2013) function, the study proposes a model in which independent directors use CSR disclosure to improve corporate position in the network giving the firm access to privileged information to win stakeholders' good will; this goodwill is transformed into profitability.

Predicted findings: The direct effect of independent directors on ROE might or might not be insignificant; however, the synergic effect of independent directors using CSR is positively related to profitability. This means that the strategy in which independent directors use CSR creates value to firms, which increases the firm's profit. The study results are expected to hold for different robustness checks.

Expected contributions: This study bridges the gap in the literature concerning independent directors, CSP and financial performance. The model proposes that independent directors are likely to enhance shareholders' wealth by using stakeholder approach. The study confirms the social network theory, resource dependence theory and agency theory.

To the best of the authors' knowledge, this is the first study that examines Schmidt and Keil's (2013) theory using world-wide empirical data and an international perspective. Based on the findings, the author proposes the idea of a linkage among the social network theory, resource dependence theory and agency theory in the global context. This logic is evidenced by the empirical link between independent directors using CSR disclosure and profitability that supports Schmidt and Keil's (2013) theory of the drivers of firm-idiosyncratic resource value. The study offers the global-level knowledge that social value can generate financial outcome if independent directors use CSR to gain the goodwill from their network. This insight might be an input for decision making on the models that promote enlightened value maximization (Jensen, 2001).

The study offers corporate managers, policy makers and investors the insight that profit might be gained from the combined resources of independent directors and stakeholders when the firms are in recession. Independent directors with more CSR engagement might perform better in maximizing shareholders' wealth. It is recommended that CSR projects should be involved with independent directors to maximize their efficiency.

1.2.3.2 Second study

This study discusses the key issues in the debate on executive pay and social responsibility of the executives. This study is positioned in the intersection of two research streams, CSP-financial performance and executive remuneration-financial performance. The landmark episodes of the decade, the financial crisis and the 2008 bursting of the credit market, have drawn attention to the size and structure of executive pay plans and their possible role in CSR agenda.

This study tests the agency theory (Jensen and Meckling, 1976) in the impact of executive remuneration on their efforts of disclosing CSR information towards maximization of profitability. To do this, applying the stakeholder theory and agency theory, this study investigates two research issues: (1) *how and why a synergy of executive remuneration and CSP disclosure affects financial performance*, and (2) *how and why executive remuneration elements influence CSP in the context of FWMA firms*. The chapter goes on to explain why firms pay executives generously, and why firms have engaged in CSP disclosure in the period of the economic downturn.

Predicted findings

This study is expected to find the probabilities that: (1) the interaction of executive compensation with CSP disclosure positively affects ROE, (2) among the granular elements of an incentive package, salary and stock

grants positively drive executives to disclose more CSR information; furthermore, in these firms, CSR disclosure positively affects CSR reputational rating. The level of significance and the magnitude of the influence of executive compensation combining with CSP disclosure on ROE rise as the ROE increases. The study results are expected to confirm agency theory and hold for different robustness checks.

Expected contributions

The theoretical contribution is the idea of the theoretical link between the stakeholder theory and agency theory. The findings from this study support the advancement of global theories of corporate governance (Zattoni and Ees, 2012) with the result that there is a global convergence of governance principles where CSR in combination with executive compensation is positively associated to profitability.

The methodological contribution of this study is the use of a world-wide dataset, in which two types of CSP proxy data, one from Fortune and the other from Bloomberg, are concurrently used to improve the reliability and validity of the empirical findings.

Empirically, this study shows the evidence of a positive impact of CSP on financial performance when firms have good compensation for responsible managers. The study explains why firms offered huge compensation packages to their executives and why there was an increase in the intensity of CSR communication in the period of the recent financial crisis. The study suggests that if executives are more generously paid, particularly with sizable salary and stock, they disclose more information on CSP. However, recognizing the agency problem and the problem of information asymmetry, the study raises the concern on managerial manipulation of CSP disclosure. However, this study raises a concern of the trustworthiness of CSR disclosure and CSR reputational rating, given the agency problem and the problem of information asymmetry in which there is usually the mixture of *good* firms and *bad* firms (Banerjee, 2006)

in the market. This concern points to the need for independent audit regimes on disclosure of CSR activities and corporate governance mechanisms towards minimisation of the risk of manipulating voluntary disclosure.

1.2.3.3 Third study

Applying the theory of transaction cost economics (Coase, 1937; Williamson, 1998), theory of market information asymmetry (Akerlof, 1970; Spense, 1973; Stiglitz, 1975), and agency theory, this study examines the variations in the impact of CSR on finance performance, moderated by governance, across three scenarios of the recent global financial crisis. The research question in this study is *how and why CSR affects financial performance if it is intervened by good corporate governance*.

The study examines the changes of CSR disclosure as well as CSR reputation, and compares the variation patterns before the crisis, at the peak of the crisis and during the years that the crisis was recovered. The factor of the financial crisis is to be identified by exploiting the variations in the impact of CSR over time, as well as the variation across two groups of industries.

Predicted findings

Using global-level data of FWMA firms, this study is expected to find the empirical evidence of the positive effect of CSP on financial performance on the condition of intervention of transparent and good governance. In addition, the study exploits the financial shock in the context of the global firms. The study is expected to find that across the crisis period, firms with higher CSR had higher chance to improvement of profitability, more relative to the firms that have well-disclosed governance practices. The impact of CSR on financial performance was more sensitive to the change in the percentage of independent directors than executive

compensation; this sensitivity rose during the years that financial performance recovered from the peak of the financial crisis. Furthermore, these effects were especially pronounced in the firms that have large total assets and large number of employees. The effect is more pronounced across the years that the firms recovered from the recent global crisis, i.e, from 2009 to 2011. The effect is anticipated to continue to hold regardless the sensitivity of the sectors to social and environmental impact was controlled in the model and for different robustness checks.

Expected contributions

While CSP impact on financial performance remains ambiguous in the empirical literature, this study will present evidence that the effect of CSP on financial performance is significant and positive in the context of well-informed good corporate governance principles in the context of financial crisis. This study is expected to establish the effect of CSR on profitability on the condition of good governance disclosure from the firm nature perspective of the transaction cost theory.

The main contribution of this study is a governance model where CSR-driven governance principles can contribute to cost control, thereby profitability improvement. It is expected that the hypothesis testing results support the statement that CSR engagement is a profitable strategy if it is intervened by good governance. Wood (2010) stated that corporate governance processes are not favored in CSP studies because they are very difficult to observe; this may be why governance has not yet claimed its place as a powerful component related to CSP. However, this study is expected to demonstrate that corporate governance is a mediator in the positive effect of CSP on financial performance. This mediating impact of governance is anticipated to be paramount at the peak of the crisis when corporate governance might play a significant role in pushing the firms out of the crisis.

1.3 Structure of the Thesis

There are six chapters in the thesis. Chapter 1 introduces the motivation and the research design. Chapter 2 presents the dataset. Chapter 3, 4 and 5 sequentially report in details the three studies as follows:

Chapter 3: Independent Directors, Corporate Social Performance and Profitability
Chapter 4: Executive Remuneration, Corporate Social Performance and Profitability
Chapter 5: A Study of the Influence of Corporate Social Performance on Corporate Financial Performance from the Firm Nature Perspective.

Finally, Chapter 6 is the overall conclusion of the thesis.

Chapter 2: Data

This chapter presents an account of the master dataset, the studied period and the justification for the choice of the unit of analysis, i.e. FWMA firm. Apart from that, the CSR measurements are reviewed, and the indicators of corporate financial performance reported. The chapter ends with the description of the data collection process.

2.1 The Master Dataset

This research project employs the **pooled cross sectional data,** collected from Fortune and Bloomberg, of FWMA companies. From the FWMA survey conducted in each year from 2005 to 2011, the ranking results were released in the following year of the survey year. This research employs the annual data from 2005 to 2011 of the firms which appeared at least once in the FWMA ranking results released by Fortune magazine from early 2006 to early 2012. There are a total of 3,593 firm-year observations in 621 non-duplicated companies in the master dataset covering thirty-one countries and seven years under the recent global financial crisis.

The specific number of firm-year observations will decrease conditionally on missing data of the variables in the regression specifications. The final numbers of observations used for each study are reported in detailed in Chapter 3, Chapter 4 and Chapter 5.

2.2 Why the Period from 2005 to 2011?

This period was chosen to reflect the changes before the crisis in global financial history (2005-2007), when the financial crisis was at its peak (2008-2009) and during the years of recovery from the peak of the crisis (2010-2011). As a result, the dataset encompasses the recent global recession spanning these seven years from 2005 to 2011.

2.2.1 The Recent Global Financial Crisis

Corporate scandals at the beginning of the 2000s, such as Enron, Worldcom in the US, Parmalat in Italy, forced the national stock exchanges, financial authorities, international organisations and multilateral donors, e.g, World Bank, International Monetary Fund, to search for effective governance practices (Hill, 2005; Zattoni and Cuomo, 2008). The starting point of the recent global financial crisis is in August 2007 when the money market interest rates rose dramatically in the USA because of the liquidity shortfall in the banking system (Taylor, 2009). The rest of the world was affected by this crisis due to their exposure to the US financial markets (Chor and Manova, 2012).

The fourth quarter of 2008 is considered the sharpest period of the crisis (Campello *et al.*, 2010), which saw the collapse of some of the world leading financial institutions. Bear Stearns, America's fifth biggest investment bank, was the first Wall Street bank to blow up in the recent crisis, caught in the credit crunch in early 2008 and foreshadowing the financial meltdown in the last quarter of that year (Guardian, 2010). Lehman Brothers experienced severe financial problems and filed for bankruptcy in September 2008. The financial crisis in the last decade resulted in sharp reductions in global growth, trade, and access to finance for developing countries (WB, 2015). Although vast amounts of public money were used to save distressed corporations, the social costs of the financial crisis are more difficult to estimate.

Since the recent global financial crisis, the relationship between business and society has been reshaped. Companies are compelled by financial circumstances to restrict their expenses including reneging on their CSR activities as it generates costs (Fernández and Souto, 2009). CSR initiatives could be delayed or cancelled because of the economic downturn as any CSR projects could incur costs. In April 2009, the leaders of the G20 met to discuss the outline of a new global regulatory regime for financial markets (Kemper and Martin, 2010). This is the time that CSR-driven corporate governance issues have been questioned most frequently over the 150-year history of firms.

During the financial crisis, the perspective that firms would make financial gains by *doing good* (Glavas and Piderit, 2009) may damage stakeholder theory because there might be few financial rewards for any firms embarrassing social goals. This is the time when the proportion of profits gained is small, likely resulting in cutting CSR spending. Social performance metrics have not adapted to the new circumstances of firms; homelessness, hunger, unemployment and risk of environmental catastrophe have all increased exponentially during the recent economic recession (Saiz, 2009). The crucial concern raised is whether companies would have continued to implement CSR initiatives with the same intensity in each scenario or would save financial capital to confront unexpected operational dilemmas during economic downturn.

Philanthropy budgets were being diverted to pay salaries and bonuses while sponsorships were under increased scrutiny by legislators, media and members of the public (Kemper and Martin, 2010). However, there are opportunities available to firms under a wide variety of economic conditions. CSR is not about redistributing the gains firms make; rather, it is about using the intrinsic capacity of the firm to improve the condition of its society and environment (Martin, 2002). There is the need for

strategic CSR (Porter and Kramer, 2006), i.e. social integration and collaborative solutions to the most intractable problems, the ones in which market failures are threatening society.

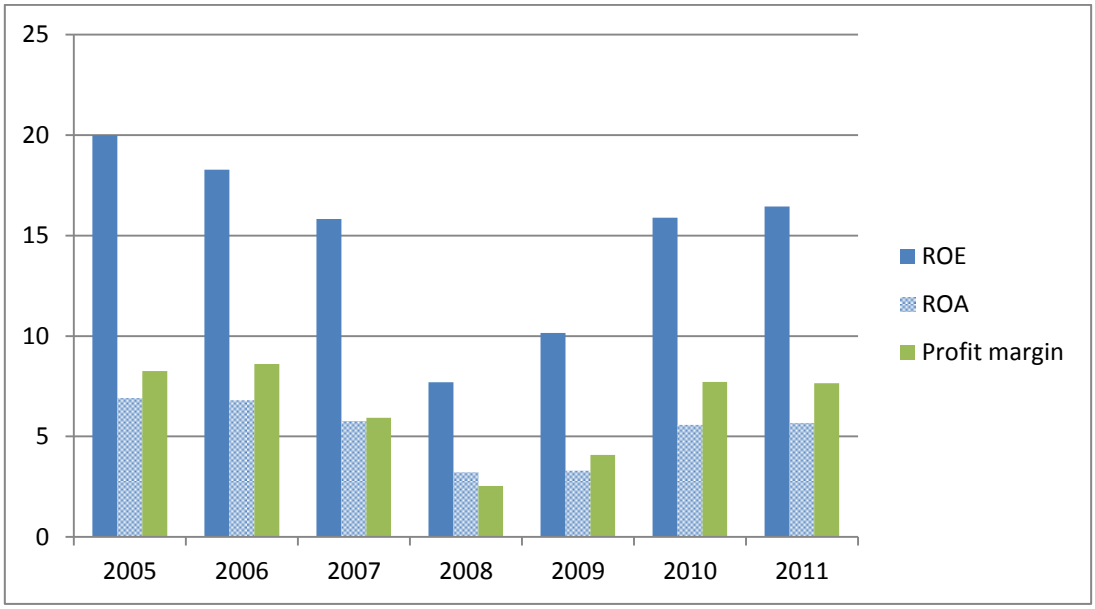
Academia and industry experts attribute the ubiquitous corporate failures to a lack of rational corporate governance and CSR practices. Society expects board members and managers to mainstream the society-driven determinants of firm value in their decision-making processes. As a result, new strands of CSR could arise as a result of changes to society, as observed across the period of the global financial crisis (Okoye, 2009).

2.2.2 The Study Period from 2005 to 2011

First, this period was chosen since the recent global recession spanned these years in which 2008 was the most unprofitable year recorded by the companies in the dataset; this year saw the lowest means of ROE (7.70), ROA (3.22) and profit margin (2.54) compared to those of the remaining years (see Figure **2.1**). Therefore, the period from 2005 to 2011, encompassing three years before and three years after 2008, reflects the changes before the crisis in global financial history, when the crisis was at the peak, and during the years of recovery. Consequently, the hypothesis testing, using data related to these observed years would reflect the time factor created by the financial shock - a difficult period when firms were in financial crisis.

Second, the seven-year observation period means that the result is less influenced by economic circumstances in the short term. *Third*, the proxy data for CSR disclosure became available in Bloomberg from 2005 onwards, which makes the data collection a feasible undertaking given the time and resource constraints of a PhD research project.

Figure 2.1: Means of Yearly ROE, ROA and Profit Margin from 2005 to 2011



The crucial question raised is whether companies continued to implement CSR initiatives with the same intensity before the global financial crisis, during the years at the peak of the crisis, and during the recovery years. The effects of these forces might vary as it has been amplified by disruptions to global ethical norms. To facilitate the deep analysis of the impact of the financial crisis, based on the discussions reported in the section 2.2.1, the period from 2005 to 2011 was split into the three sub-periods, *before the crisis* (2005-2007), *during the peak of the crisis* (2008-2009) and *during the recovery years from the crisis* (2010-2011). Employing pre-crisis data allows for an unbiased assessment (Hoorn, 2015) of the impact of CSR on financial performance.

2.3 Why Fortune World's Most Admired Companies?

There are three reasons for using the data of the FWMA firms for testing the hypotheses in the studies. *First and foremost*, the author used the context of FWMA companies from the recent financial crisis for the

research as their profound impact from the national systems of corporate governance. It is believed that national systems of corporate governance evolve in a manner consistent with the country's history, legal environment and socio-cultural traditions of the nations (Kim, 2005).

There are globally two mechanisms for implementation of corporate governance codes - *mandatory* or *voluntary* regulations of compliance. The classic examples of the two mechanisms are legislation (e.g., the US Sarbanes-Oxley Act of 2002 and the Japan Financial Instruments and Exchange Law of 2006), both of which set out strict rules for the internal control of financial reporting in order to protect investors by improving the accuracy and reliability of corporate disclosures), and a "*comply or explain*" approach (e.g., the UK Combined Code of 2003). Being aware of the unique country characteristics, the author adopted the international perspective and employed a global dataset to explore the conversion of global theories related to behaviours of multinational firms towards sustainability across the years of the recession.

Secondly, the FWMA rankings are computed on global firms based on the similar worldwide-applied criteria developed by the rating agency. Fortune interviewers asked a large number of executives, directors and security analysts to rate the companies in their own industry, selecting the one they admired the most, and in which CSR was considered as one of the key areas[1] of leadership of a company in that relevant industry. This

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1. The FWMA ranking result released in early 2006, 2007 and early 2008 was constructed on the reputation of a firm in eight key areas of leadership including CSR, innovation, people management, use of corporate assets, quality of management, financial soundness, long-term investment, quality of products and services in their industry. The ranking results released from early 2009 to early 2012 added one more criteria, the global competitiveness in the industry, to make up the total of nine key areas of leadership of a firm in their relevant industry. See http://archive.fortune.com/magazines/fortune/most-admired/2012/, accessed on 20 August 2012.

rating exercise includes global companies from many countries in the world, which enables the findings to go beyond economic activities in a single country. This allows more chance for the generalisation of the findings towards the development of a global theory on corporate governance.

Thirdly, previous studies suggest that firms providing more CSR information tend to be larger and belong to high profile industries (Chan *et al.*, 2013). It is also empirically evidenced that preserving the established reputation requires a firm to deliver consistent performance over a designated period of time (Petkova *et al.*, 2014). Given the accelerated global competition and trade liberalization, FWMA companies tend to adopt CSR principles and practices from the Anglo-Saxon nations (Flammer, 2014b). Apart from the fact that the reputation of these companies has been rated by Fortune, these companies are among the world's largest multinational firms whose financial reports are audited by the world leading auditing firms. With the global reputation and total assets from approximately USD 1 billion to USD 2,600 billion for the firms in the dataset in 2011[2], each of FWMA firms in this study has had a profound impact on their global value chain and the world economy.

2.4 Measures of Corporate Social Performance

How to measure CSP remains challenging in both literature and in industry as this measurement rests on the false assumption that human behaviour is observable and that observers have the time and ability to watch all human behaviour (Eisenhardt, 1989). Jones (2004) indicates that the difficulty lies in identifying and quantifying CSP because, like any

2. Bloomberg database accessed from April to June 2012.

social construct, not only does it involve spending and actions but also behaviours. Consequently, impact evaluations of CSR performance have not been uniform in previous research.

There is, still, a convergence towards considering CSP as the proxy for CSR adoption. This is because CSP articulates principles of social responsibility, the process of social responsiveness, policies, programmes and observable outcomes; these are related to the a firm's relationship with stakeholders (Wood, 1991a; Wood, 1991b). In other words, CSP refers to the measureable outcomes of CSR.

McGuire *et al*. (1988) categorises the commonly used methods of CSP measurements into three groups: (1) expert evaluation of corporate policy; (2) content analysis of corporate documents; and (3) using performance as a proxy measurement. Each of these categories has disadvantages. The arguments related to the choice of Bloomberg social disclosure score for the proxied measurement of CSP is provided in the next paragraphs.

Each of the three above-mentioned categories has disadvantages. Bowman and Haire (1975) and Abbott and Monsen (1979) criticise the expert evaluation method because its validity depends on the skills, expertise and information quality of those who make assessments. The second method, content analysis, has the disadvantage of confusing social orientation with corporate actions (Ullmann, 1985) and/or public relation value (Mc Guire *et al.*, 1988). The third group, using performance as a proxy for CSP in this research, is seen to reflect only a very limited number of observable and measurable facets of CSP.

Recognising the disadvantage of CSP quantitative data, this study uses two proxy measurements related to CSR in Chapter 4 and Chapter 5. They are the social disclosure score from Bloomberg (*social_dis*) and the rating

for CSR reputation from Fortune (*csr_reputation*), to improve the reliability and validity of the empirical findings.

For the description of CSP data in this research project, the Bloomberg social disclosure score is proxied for CSR disclosure. This disclosure score is based on the amount of information a company disclosed on social activities. The score ranges from 0.1 for companies that disclosed a minimum amount of social data to 100 for those that disclose every data point collected by Bloomberg. Each data point is weighted in terms of importance, with workforce data carrying greater weight than other social data. The score is also tailored to different industries. In this way, each company is only evaluated in terms of the data that is relevant to its industry sector (Bloomberg, 2012).

The data of Fortune rating in CSR reputation ranges from 1 for the top firm to 17. For the alignment of two CSP proxies where the highest score should reflect the best performing company, the author reversed the original Fortune rating score from 1-17 to 17-1, in which 17 was scored by the best performers and 1 by the worst performers.

There are pros and cons of CSP measurement in prior studies that have used either Bloomberg social disclosure data or Fortune CSR reputation ratings. As far as CSR disclosure data are concerned, the advantage of the Bloomberg social disclosure score, proxied for CSR disclosure, is that it is calculated in terms of the degree of transparency of a company's reporting on social metrics. While Bloomberg social disclosure scores are not specifically a performance metric, they indicate the degree to which a company is using and reporting non-financial information. The quality of disclosure does matter as market interest in non-financial information has been on the rise during the past two decades (Eccles *et al.*, 2011) even though disclosure and performance are two different concepts.

However, the similarity of stakeholders when evaluating and comparing CSP disclosure among different firms remains debatable. Wood and Jones (1995) review twelve different empirical studies relating CSP disclosure to financial performance. Some studies find positive relationships between CSP disclosure and earnings; others conclude that there are negative relationships or no relationships at all. The question of what stakeholders really count in setting expectations, experiencing effects or evaluating accounting measurement results remains open and in need of theoretical clarity (Wood and Jones, 1995). These are the disadvantages of CSR disclosure data.

Assuming there is a signaling equilibrium under which the sender signals genuinely and the receiver trusts that information, the equilibrium breakdown occurs in either under-information or over-information situations as defined by Spense (1973). In this situation, the signal receivers are unable to confirm the reliability of the signals because the signaling effectiveness depends upon a reasonable and sufficient number of signals within the appropriate cost range. Therefore, in order to focus exclusively on the research problems, this study makes a critical assumption that CSR disclosure genuinely reflects the social responsibility of firms at the signaling equilibrium of CSR disclosure.

Regarding the data for CSR reputation rankings, following McGuire *et al*. (1988), the advantage of Fortune CSR ratings is that the respondents rate only the firms in their industry. The respondents are those who have direct access to firm and industry information, which is considered necessary input for rating exercises on CSP because corporate communication may provide incomplete, subjective, unaudited and inconsistent information. The majority of the respondents are investors, brokers and investment consultants. They played a significant role in monitoring corporate activities. Using such industrial experts as respondents is an advantage of the Fortune survey. Flanagan *et al*. (2011)

suggest that Fortune's data is a useful and valid source because a weaker relationship between measures of financial performance and the overall ratings was found when more recent data was examined.

However, the disadvantage of the Fortune rating data is that they are collected from surveys that are subject to managerial exaggeration. Thus, the validity and appropriateness of Fortune rating data requires further examination because it may reflect biases among the evaluators (Mc Guire *et al.*, 1988). The issue of Fortune rating results being influenced by financial '*halo*' was raised (Brown and Perry, 1994). What's more, the methodology used by the rating agency, the rating quality, and the reliability of the results have been strongly debated (Chatterji *et al.*, 2009). This raises the concerns on these initiatives, e.g. whether the rankings are of great value to protect shareholders and societal groups given the loopholes in international and domestic legal systems which top management can take advantage of when pursuing their self-interest in building reputation.

Taking these critical points into account, the author employs two CSR proxies, one from Bloomberg and the other from Fortune, to improve the validity and reliability of the findings.

2.5 Data Collection Process

The master dataset was obtained after four steps of data collection. The *first* is the collection of the name of the firms appearing at least once in FWMA companies ranking annually from 2006 to 2012. The survey and the rating process had been conducted in the year prior to the year in which the ratings were published. i.e. from 2005 to 2011. *Second*, data of CSR ranking of the FWMA firms was manually collected from the Fortune website. *Third*, the companies that fall into the types of private, pending-

to-be-published, inactive or delisted companies were excluded from the master dataset. *Fourth*, the annual 2005-2011 data for the relevant variables were extracted from Bloomberg. The next paragraphs further describe the data collection.

Regarding the FWMA company survey, this is the definitive report card survey on the corporate reputation of firms in their industry. The survey was conducted by the partners of Fortune at Hay Group, starting with the Fortune 1,000 (the 1,000 largest US companies ranked by revenue), non-US companies in Fortune's Global 500 database with revenue of USD10 billion or more, and the top foreign companies operating in the US. Table 2.1 shows the number of companies on the annual FWMA list published in the early 2006 to early 2012.

Table 2.1: The Number of Companies on the Annual FWMA list[3]

Releasing year	Number of companies on the annual FWMA list
2006	583
2007	586
2008	611
2009	687
2010	665
2011	672
2012	688

Hay Group asked a large number of executives, directors and securities analysts to rate companies in their own industry, and to select the companies they admired most. One of the groups who play a large role in monitoring corporate activities is institutional and individual

3. See http://archive.fortune.com/magazines/fortune/most-admired/2012/, accessed on 20 August 2012.

investors, brokers and investment advisory services; as a result, using such industrial experts as the respondents is an advantageous strategy of the Fortune survey.

Fortune published the annual rating results (1 for the best performer to 17 for the worst performer) early in the year following the year the survey was actually done. This study uses the 2006–2012 data released on the website, for which the rating process is in fact conducted in the previous years, 2005–2011. The master dataset is unbalanced because a significant number of companies appear from one to six times in the annual rating result within the seven years of observations, while quite a few other companies appear up to seven times within this period.

Initially, the total number of non-duplicated firms in the data frame of Fortune World's Most Admired companies (2006–2012) was 1,114, regardless of whether they appeared in one year or more than one year on the rating list. Each company was then provided with an ISIN code that the author sourced from the Bloomberg (2012) repository. However, the companies that fell in the group of private, pending-to-be-published, inactive or delisted companies were excluded from the master dataset. There remain 621 companies in the master dataset.

Next, a Bloomberg download template was used to export the yearly financial data and the data for the relevant variables from 2005 to 2011. As already mentioned, only the active public companies were retained in the remaining dataset, leaving the size of the master dataset reduced to 621 non-duplicated firms and 3,593 firm-year observations.

The specific number of firms and firm-year observations reported in each study will decrease conditionally on missing data of the variables in the regression specifications. The final numbers of observations used for

running regressions are reported in the regression result tables in Chapter 3, Chapter 4 and Chapter 5.

Chapter 3: Independent Directors, Corporate Social Performance and Profitability

This study proposes a model of how and why independent directors using CSR in the form of social disclosure affect profitability. The model is built on Schmidt and Keil's (2013) theory of the conditions and mechanisms that make resources valuable to a firm ex ante. The empirical data supports the model. Statistically, the effect of CSR disclosure on profitability when having independent directors in the governance model is significantly positive. Further, CSR disclosure mattered more in less profitable firms when independent directors were present in the model. The study results hold for different robustness checks. The study results confirm Schmidt and Keil's (2013) theory. This study bridges the gap in the literature concerning the contribution of independent directors and CSP to corporate financial performance. The study suggests the empirical link among the social network theory, the resource dependence theory and the agency theory in the global context. The study offers investors, managers and policy makers the insight that profit can be gained from the firm's position in the inter-organisational network, which might be improved by the independent directors using CSR disclosure. As a result, the study reveals the underlying mechanism in which independent directors enhance shareholders' wealth by using CSR information on the purpose of winning stakeholder goodwill.

3.1 Chapter Introduction

Schmidt and Keil (2013) developed a theoretical model identifying the conditions and mechanisms that make resources valuable to a firm before a decision on acquiring or building is made. Their model is based on four factors including the firm's ex ante market position, its ex ante resource base, allowing for complementarities, its position in inter-organisational networks giving access to relevant information, and managers' knowledge and experience allowing judgement about how to use the resource. Being built on Schmidt and Keil's (2013) function of the drivers of firm-idiosyncratic resource value, this study proposes a model of the value added to profitability sourced from independent directors using CSR disclosure. Based on this proposed model, the study examines whether the resource of independent directors in combination with networks of stakeholders realistically contribute to financial performance of the global corporations.

Specifically, the study investigates how and why a model that combines independent directors with CSR disclosure affects profitability. It is noticed that there is a transformation from the social value of independent directors and their stakeholder networks though CSR to financial value. This change is viewed as one of the indicators of the effectiveness of the independent directors. The research question in this study is *how and why independent directors using CSR is likely to result to increased profitability*. The research question was addressed by drawing on the social network theory, resource dependence theory (Pfeffer and Salancik, 1978) and agency theory (Jensen and Meckling, 1976). Underpinned by these theories and the Schmidt and Keil's (2013) function, the study proposes a model in which independent directors use CSR disclosure to improve corporate position in the network giving the firm access to privileged information to win stakeholders' good will; this goodwill is transformed into profitability.

To the best of the authors' knowledge, this is the first study that examines Schmidt and Keil's (2013) theory using world-wide empirical data and an international perspective. Based on the findings, the author proposes the idea of a linkage among the social network theory, resource dependence theory and agency theory in the global context. This logic is evidenced by the empirical link between independent directors using CSR disclosure and profitability that supports Schmidt and Keil's (2013) theory of the drivers of firm-idiosyncratic resource value. The study offers the global-level knowledge that social value can generate financial outcome if independent directors use CSR to gain the goodwill from their network. This insight might be an input for decision making on the models that promote enlightened value maximization (Jensen, 2001).

The following section presents the literature review that underpins the two hypotheses on the synergic influence of independent directors combined with CSR on profitability. Next, the author describes the research methodology followed by the results. The last section discusses the implications, highlights the contributions and limitations of this study and suggests future research areas.

3.2 Literature Review and Hypothesis Development

While the question of the effect of independent directors on financial performance is a popular research topic, empirical results have varied substantially across studies (Dalton *et al.*, 1998; Dalton *et al.*, 1999). After fifteen years, the overall conclusion of the many empirical studies is still that there is no relationship between independent directors and firm performance (Hermalin and Weisbach, 2003). There is no significant difference between high-performing companies and low-performing companies in terms of the number of outside directors. On the other

hand, the key to making boards work better rests in the board process (Finkelstein and Mooney, 2003).

The literature on boards of directors generally classify directors' roles into three categories: monitoring management (control task); providing advice and counsel to management (service task); and providing resources from the external environment (resource dependence task). However, the role of resource provision by independent directors and their impact on financial performance have been inadequately studied (Kim and Cannella, 2008). Johanson and Ostergren (2010) suggest that any global theories related to independent directors should integrate social connectedness in corporate network.

Social Network Theory: the Social Capital of Independent Directors and Stakeholders

The social network theory (Powell, 1990) is the perspective gathering new insights into the mechanism that independent directors affect firm performance. The centre in this mechanism is the social capital and the network. Network constitutes a "distinct form of coordinating economic activity" (Powell, 1990), which contrasts (and competes) with markets and hierarchies (Hart, 1995; Jones *et al.*, 1997; Williamson, 1998).

Social capital is defined as the goodwill available to individuals and groups and is sourced from the social relations among the actors of the social networks (Adler and Kwon, 2002), thus being a resource. Earlier, Burt (1992) defined social capital as relationships with others through whom opportunities to use financial and human capital are received. Two features of social relations that give rise to social capital are the opportunities provided by the network structure of those relations and the ability at each of the nodes of this network that can be mobilized by such goodwill (Kwon and Adler, 2014).

Kim and Cannella (2008) define social capital of a director as the interpersonal linkages that the director has to others, both inside and outside the firm (i.e. internal and external social capital). At group level, board social capital is an asset that includes both relations of directors and potential resources arising from the relations. Their concept of social capital includes not only social networks but also the content of social relations such as trust, liking, obligation and respect, as well as the outcomes from social relations such as information and influence. Haynes and Hillman (2010) have the same viewpoint that board social capital is the resources residing in social networks including the individual director's personal ties that benefit the board.

Social capital is developed through the social networks that directors create over time (Hillman and Dalziel, 2003). Directors are subject to the normative pressure of maintaining access to social networks and are likely to enjoy the benefits of the resulting board social capital (Sauerwald *et al*., 2014). Board-level social capital is positively associated with board effectiveness (Kim and Cannella, 2008) since external social capital provides companies with links to the external stakeholders through whom the firm can gain information, resources and legitimacy. These arguments are in favour of independent directors with specific types of social capital adding idiosyncratic value to the board, hence more chance of creating value for firms.

Resource Dependence Theory: Independent Directors Using CSR - the Combined Resources Valuable to Firms

Resource dependent theory (Pfeffer and Salancik, 1978) suggests that superior firm performance is attributable to endowment with superior resources which is valuable, rare and difficult for other firms to replicate or substitute. In the resource-based view, the resource underlying competitive advantages need to be valuable (Barney, 1991). Yet,

resources deployed by firms are only valuable to the extent that customers value a firm's products and services (Sirmon *et al.*, 2007) because of uncertainty in which future impact of a resource may not be known and the resource value becomes subjective (Kraaijenbrink *et al.*, 2010). This leaves a gap in the resource-based literature, between the supply side and the demand side. The gap has been filled by Schmidt and Keil's (2013) function identifying conditions and mechanisms that make resources valuable to a firm before a decision on acquiring or building it is made. Defining resource value as willingness to pay for or invest in a resource, Schmidt and Keil (2013) measure resource value as a function of both internal factors (the firm's resource base that allows for complementariness and its managers' characteristics) and external ones (the firm's market position on which customers' valuing its output and the firm's position in inter-organisational network giving access to information).

One the one hand, Schmidt and Keil (2013) strengthen the theoretical validity of resource-based view by developing the new theory identifying the ex ante conditions under which firms attribute value to a resource. Their theory proposes that the more central the position of a firm in the network of stakeholders, such as customers, suppliers and alliance partners, the better the firm can act as broker by bridging structural holes in the network of those stakeholders. Also the more diverse the relationship of the firm to its customers, suppliers and alliance partners, the better it can assess information; subsequently, their customers are more willing to pay for the firm's resources.

On the other hand, the stakeholder synergy perspective (Tantalo and Priem, 2014) that extends the stakeholder theory further into the strategy realm offers further insights into realizing synergic value creation. This perspective identifies new value creation opportunities; a *single* strategic action increases different types of value for two or more stakeholders but simultaneously does not reduce the value already received by any other

essential stakeholder. This is obtainable because multiple potential resources of value creation co-exist within each potential stakeholder group (Tantalo and Priem, 2014). Resource value is driven by product market value, which means that the measure to stimulate demand and increase willingness-to-pay for the firm's output contributes to higher resource value. Thus, how customers perceive value and how firms can boost customers' willingness to pay are among the key contributors to firm performance (Priem, 2007).

The new theory of Schmidt and Keil (2013) strengthens the empirical base of the resource dependence theory by identifying independent variables for tests of the resource-based view. Empirical studies using resource-based view usually test for a direct relationship between the existence or usage of a resource and the performance outcome (Armstrong and Shimizu, 2007). However, Schmidt and Keil (2013) argue that a proper test of this resource-based view should account for the measure of ease or difficulty with which firms are able to come into possession of a resource. This requires a causal relationship to be established between the factors facilitating or inhibiting firms in acquiring or building a resource and performance rather than between the existence of the resource itself and performance.

Resource dependent theory suggests that independent directors are an important source that increases the social capital of the board. Board capital as the sum of individual director's human and social capital, can be used to provide resources for aiding in the formulation and implementation of firm strategy and monitoring (Hillman and Dalziel, 2003). This links a firm to its external environment and can foster access to critical information and valuable resources that help reduce uncertainty for strategic actions (Haynes and Hillman, 2010). Board social capital refers to directors' ability to access resources through relationships. In

the resource-based view, independent directors are one means of forming corporate linkages with the external environment that enables an organisation to gain resources.

Directors may accumulate private social capital by strategically positioning themselves as brokers in social networks, creating ties to elite institutions (Burt, 2005; Galunic *et al*., 2012). Directors also benefit from membership in their social network, the public form of social capital. Social network and commonality of background appear to affect director appointments and dynamics of the board (Ferreira, 2015). Thus, directors will not risk ignoring the normative pressures of fellow directors because this behaviour may result in the loss of social capital (Westphal and Khanna, 2003). The social networks, externally through stakeholders and internally through independent directors, are instructive for theoretical inquiry into the effects of social capital of independent directors on financial performance.

A company depends on resources which originate from a company's environment; resource dependence theorists underpin the argument that independent directors' resources are transferred into value added to corporate financial outcome. Schmidt and Keil's (2013) framework is the basis for empirical tests of the resource-based view in independent directors-using-CSR models. The pressures of conforming to global best practices and adhering to social norms by using CSR when there is environmental uncertainty are the antecedents of engaging with stakeholders to maintain the social networks. Thanks to those, social capital is accumulated which is converted into willing-to-pay to maximize profit. The following hypothesis is therefore formulated.

H1: The resources that gain from independent directors building their networks through CSR disclosure are likely to result in increased profitability.

Testing this hypothesis is of importance. Luan and Tang (2007) find independent directors have a significant positive impact on ROE in Taiwan, but not significant in the outperforming firms due to their absorptive capacity. Peng (2004) suggests that independent directors have little impact on ROE during institutional transition in China. Bhagat and Black's (1999) survey of boards of American public companies that have a majority of independent directors reveals the uncertain relationship between board composition and firm value. They find the evidence that firms with supermajority-independent boards are even less profitable than other firms. The result of a metal-analysis conducted by Rhoades *et al*. (2000) indicates that both insider and outsider dominated boards had a small positive impact on financial performance. The literature on the effectiveness of independent directors to a firm remains inconclusive.

Likewise, literature remains unanswered of the effect of CSR on financial performance. Ntim and Soobaroyen's (2013b) study finds that a combination of corporate governance and CSR has a stronger positive effect on profitability than CSR alone in a single country. There should be underlying mechanisms involved with the moderated and mediated variables in this relationship (Zattoni and Ees, 2012). The result of testing this hypothesis would exhibit the underlying mechanisms involved with the governance variables combining with CSR in the CSP-financial performance relationship.

Agency Theory: Independent Directors Pursuit their Self-interests

Independent directors (outside or external directors) of a firm have been loosely defined as people who have never been previously employed by that firm (Dore, 2005). On principle, independent directors are paid to serve as external monitors to and advisors for management; however, their self-interest might be paramount to building their own prestige and

increasing their employability (Acharya and Pollock, 2013) whilst enjoying company remuneration. Independent directors, like any agents in principle-agent relationship (Jensen and Meckling, 1976), might prioritize their self-interests rather than making efforts to increase shareholders' wealth. Independent directors can gain their reputation and individual social capital from networking with stakeholders; they might advise CEOs to use low CSR but high CSR disclosure as CSR activities can be costly to firms or advise CEOs to use high CSR and high CSR disclosure, whichever works in their best interests.

Social capital is a determinant of director selection and board effectiveness in Kim and Cannella's (2008) framework. External social capital generates unique resources that are important to board effectiveness. This item of capital is positively associated with selection of independent directors because it indicates the candidates' ability to achieve effectiveness through links to the external environment. When firms search for a new board member, they consider a potential director's ability to access resources through relationships, which can be built by interlocking directorate ties and engaging stakeholders (Chen, 2014). Therefore, engagement with stakeholders could be one of the strategies that independent directors might use for their own benefits in terms of employability and effectiveness. Independent directors are likely to build their networks with stakeholders by exerting their influence on CSR disclosure for social capital gain.

The agency view and resource-based view are not mutually exclusive in judging independent directors using CSR. On the one hand, independent directors possibly advise CEOs to increase CSR disclosure, thus winning goodwill of stakeholders and allowing the independent directors to accumulate social capital through networking with stakeholders. On the other hand, the combination of resources of independent directors and stakeholders is likely to make independent directors more effective to firm performance. Overall, according to the agency view, independent

directors are opportunistic when exerting their influence on CSR. According to the resource-dependence view, independent directors using CSR might be beneficial to firms.

There is evidence that firms with a higher proportion of independent directors on the board are empirically associated with higher levels of voluntary disclosure (Cheng and Courtenay, 2006; Donnelly and Mulcahy, 2008). CSR disclosure is defined as the communication on the social and environmental impact resulting from organisations' economic actions on particular interest groups within society (Gray *et al.*, 1996). Companies seek to legitimise their existence to society by voluntarily disclosing social and environmental information within socially constructed systems of norms, values, beliefs and definitions (Owen, 2008). Companies are supposed to undertake activities that are compatible with social values, and to communicate that their activities are congruent with such values (Buhr, 1998). Even though disclosure and performance are two different concepts, quality of disclosure does matter as market interest in nonfinancial information has been on a rise during the past two decades (Eccles *et al.*, 2011).

Although independent directors are opportunistic agent of shareholders, they could use CSR disclosure to build and maintain their network with stakeholders, thus strengthening the firm's position in inter-organisational networks. This gives the firm access to privileged information and resources that increase willingness-to-pay of consumers (Schmidt and Keil, 2013). Since willingness-to-pay is transformed into value, the value will be added to firm profit, suggesting the following hypothesis.

H2: Independent directors pursue their self-interest by using CSR disclosure for networking, which is transformed into value added to firm profit.

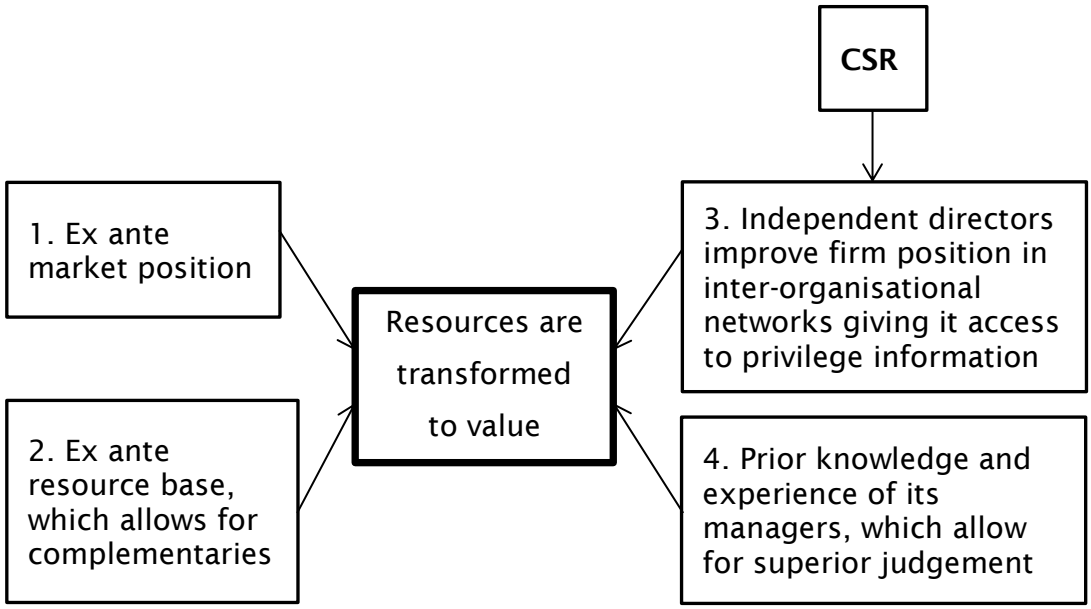
This hypothesis is important because its test result adds further objective evidence for judging the effectiveness of independent directors. This is because there are plausible reasons for the concern on the effectiveness of independent directors in profit maximization (Gordon, 2007). Due to independent directors' lack of information, firms with a higher percentage of independent board members do not always perform better than the rest. The main concerns lie in independent director's capacity of scrutiny for making sound advice. In the absence of detailed information, independent directors may not be able to understand business well enough to make a meaningful contribution to improving financial performance (Ravina and Sapienza, 2010). Although the previous researchers claim that independent directors might be motivated by self-interest as they build reputation at the cost of shareholders and society (Raelin and Bondy, 2013), there is a need to have an impartial study of the effectiveness of directors' maintaining and improving CSR. Whether this decision drives to the benefits in favour of shareholders remain controversial. This hypothesis is of importance for those reasons.

The Model Built on Schmidt and Keil's (2013) Theory

Schmidt and Keil's (2013) theory demonstrates four factors identifying conditions that make resources valuable to a firm ex ant. They are (1) the firm's ex ant market position, (2) its ex ant resource base, which allows for complementariness, (3) its position in inter-organisational network, which gives it access to privileged information, and (4) the prior knowledge and experience of its managers, which allows for superior judgement concerning the value-creating potential of the resource.

Applying this theory, this study proposes a model of increased profitability due to the value added by a resource resulting from independent directors using CSR, illustrated in Figure 3.1.

Figure 3.1: The Model Built on Schmidt and Keil's (2013) Theory of Conditions and Mechanisms that Resources Become Value



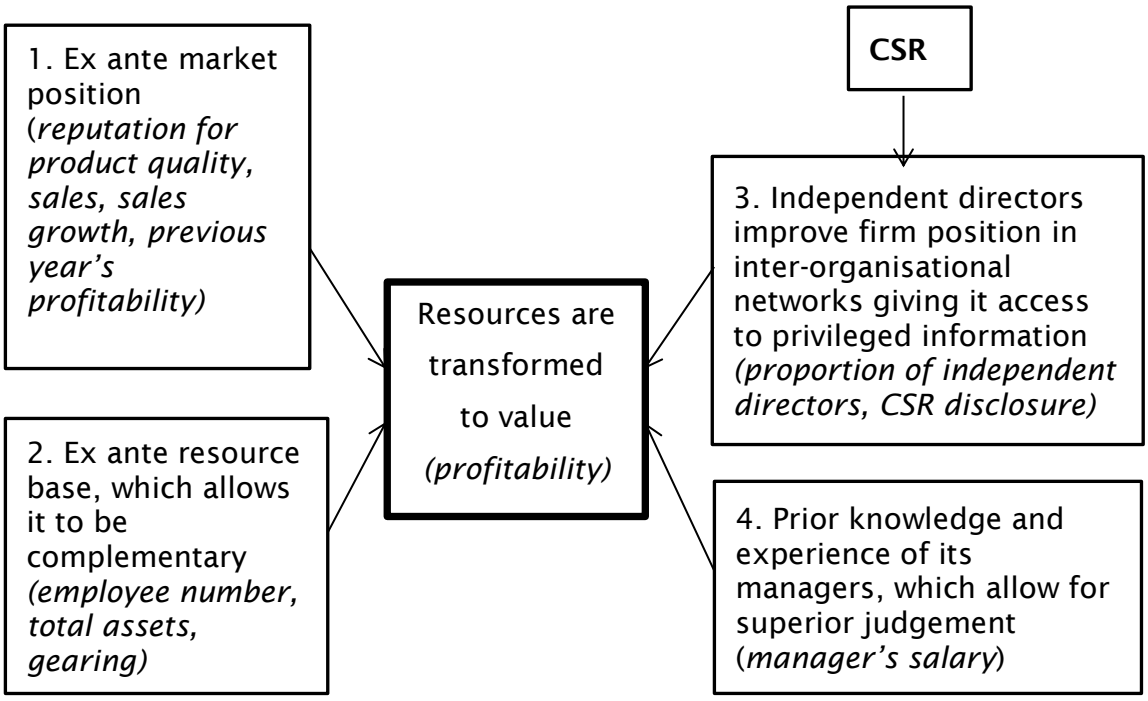
The key explanatory factor in the model is the impact of CSR disclosure used by independent directors on a firm's position in the inter-organisational network, which gives the firm better access to privileged information. When firms have the resource's value based on proprietary information, the firms should be able to acquire profitability (Makadok and Barney, 2001). This factor is operationalised by the two dimensions, CSR disclosure and independent director.

3.3 Research Method

3.3.1 The Proposed Theoretical Model

Underpinned by the previous literature, the proposed model in Figure 3.1 is deliberated in Figure 3.2 as followed.

Figure 3.2: The Proposed Model Built on Schmidt and Keil's (2013) Theory of Conditions and Mechanisms that Resources Become Value for Empirical Tests



3.3.2 Data

This study chose the context of global firms to test the proposed model illustrated in Figure 3.2 with the aim towards the development of global insight of corporate governance (Zattoni and Ees, 2012). The study employs the pooled cross sectional data of FWMA companies collected from Fortune and Bloomberg. From the FWMA survey conducted in each year from 2005 to 2011, the ranking results were released in the following year of the survey year. This research employs the annual data from 2005 to 2011 of the firms which appeared at least once in the FWMA ranking results released by Fortune magazine from early 2006 to early 2012. There are a total of 3,593 firm-year observations in 621 non-duplicated companies in the master dataset covering thirty-one countries and seven years under the recent global financial crisis. This is pooled

cross sectional data. Further detailed description of the study context, master dataset and data collection process is provided in Chapter 2.

From the master dataset, a final dataset was constructed after omitting the observations in which the data of the independent and control variables are missing. The final dataset was left with 1,817 firm-year observations of 545 companies in 171 industries in 20 countries. This is an unbalanced panel. This is the final dataset employed for the empirical investigation in this study.

3.3.3 The Regression Specification

Based on the proposed theoretical model illustrated in Figure 3.2, the multivariate regression specification below was built to fit the data using a firm as the unit of analysis. Schmidt and Keil (2013) assume that there were perfect information, accurate expectation of future states by all firms, and that all firms were identical in their risk preferences. Given the difficulties in measuring these variables in a large sample and what constitute a relevant resource varies according to the firm and industry (King and Zeithaml, 2003), fixed-effects estimation method was applied to control unobservable time-invariant factors in the model. Furthermore, the study applies quantile regressions on different levels of profitability of the firms and the event approach using three subsets of the data, pre-crisis, at the peak of the crisis and during the recovery years after the peak of the crisis. The deployment of these methods enhances rigorousness for the empirical findings.

$$(profitability)\text{it} = \beta 0\text{it} + \beta 1\text{it}(social\_dis) + \beta 1\text{it}(in\_director) + \beta 2\text{it}\,(salary) + \beta 3\text{it}\,(employee) + \beta 41\text{it}(assets) + \beta 5\text{it}\,(gearing) + \beta 6\text{it}\,(qua\_reputation) + \beta 7\text{it}\,(sales) + \beta 8\text{it}(salesgrow) + \beta 9\text{it} - 1(profitability) + \beta 10\text{it}(yearD) + \beta 11\text{it}(industryD) + \beta 12\text{it}(countryD\,) + \varepsilon\text{it}$$

Equation 3.1: The Regression Specification

Where

profitability is operationalised by return on equity (ROE);

social_dis is the Bloomberg social disclosure score;

in_director is the percentage of independent directors on board;

salary is the natural logarithm of executive salary, as one of the elements of the executive compensation package;

employee is the natural logarithm of number of employees;

assets is the natural logarithm of total assets;

gearing is the debt-to-equity ratio;

qua_reputation is the reputation for product and service quality, being rated 17 for the highest and 1 for the lowest;

sales is the natural logarithm of turnover;

salesgrow is the growth rate of turnover;

industryD is the dummy variable for 171 industries;

yearD is the dummy variable for each year from 2005 to 2011;

countryD is the dummy variable for each country in the final dataset.

The detailed description of the variables and the measures are provided in Appendix 1. Natural logarithm was obtained for *salary*, *employee*, *assets* and *sales* to improve the normality of the data related to these variables as normal distribution of the variables is one of the OLS assumptions.

3.3.3.1 Dependent Variable

In this research project, corporate financial performance is judged upon profitability. Specifically in this study, the dependent variable, profitability, is measured by ROE following Flammer (2014a) and Makni *et al.*(2009). In theory and practice, ROE has been commonly used to measure the profitability of firms. ROE is less susceptible to earning management compared to ROA (Prior *et al.*, 2008), and partially represents investors' evaluations of a firm's ability to generate future economic earnings rather than past performance (Mc Guire *et al.*, 1988).

3.3.3.2 Independent Variables

CSR Disclosure

This is proxied by Bloomberg social disclosure score (*social_dis*). The score ranges from 0.1 for companies that disclosed a minimum amount of data to 100 for those that disclosed every data point. Each data point is weighted in terms of importance, with workforce data carrying greater weight than other social data. The score is also tailored to different industries. In this way, each company is only evaluated in terms of the data that is relevant to its industry sector. Bloomberg disclosure scores are not specific performance metric. They indicate the degree to which a company uses and reports non-financial information. See 2.4 for further information and the pro and con discussions of Bloomberg social disclosure score.

Independent Director

The percentage of independent directors, *in_director*, was used as the proxy for the participation of independent directors on boards. The literature loosely defined independent directors (outside or external directors) of a firm as the people who have never been previously

employed by that firm (Dore, 2005) and who serve on the board of directors to do independent monitoring task and to be impartial advisors to CEO. This study is rested upon Bloomberg's definition of independent directors. This variable, *in_director* , is defined by the percentage of independent directors on board membership following Beasley (1996) and Rashid's (2014) study that employed the percentage of outside directors as the proxy for board independence.

3.3.3.3 Control Variables

The factors (1), (2) and (4) are controlled in the model in accordance with the three factors of Schmidt and Keil's (2013) function. They are the firm's ex ant market position (1), its ex ant resource base, which allows it to be complementary (2), and the prior knowledge and experience of its managers, which allow for superior judgement concerning the value-creating potential of the resource (4).

For the firm's ex ant market position, the reputation on quality of product and services (*qua_reputation*), total turnover (*sales*), sales growth (*salesgrow*) and lagged ROE (*l.roe*) were used as the control variables. Schmidt and Keil (2013) denote market position of a firm as a function of its resource deployment decisions in previous periods, which affects both its costs and willingness to pay in a way that makes the firm unique, hence value creation. Value creation involves the factors that establishes or increases the consumer's valuation of the benefits of consumption (Priem, 2007); such intangible asset like reputation has an effect on firm performance (Lee and Roh, 2012). In addition, how customers perceive value, how value is created from using products and services (Vargo and Lusch, 2004; Vargo and Lusch, 2008) and how firms are able to boost customers' willingness to pay are the key contributors to firm performance (Priem, 2007). Corporate reputation is defined as the accumulated impression that stakeholders have of the firm, resulting from their interactions with and communications received about the firm from a marketing perspective (Fombrun and Shanley, 1990). To control

the effects of ex ant market position, reputation rating of quality of product and service (*qua_reputation*) were accounted in the model. *qua_reputation* is the rank of a firm's reputation in its service and product quality by Fortune. Market position is also characterised by level of sales, sales growth and ex ant profitability (Prior *et al.*, 2008; Ammann *et al.*, 2011). This explains why sales (*sales*), sales growth (*salesgrow*) and lagged ROE (*l.roe*) are controlled in the regression specification. Natural logarithm of turnover (*sales*) was obtained to reduce the effects of outliers in the distribution of this variable.

To control for a firm's ex ant resource base, which allows for complementariness in the model, the author used number of employees (*employee*), total assets (*assets*) and debt-to-equity ratio (*gearing*). Financial performance is likely subject to the size of the resource base; several aspects of its may influence corporate governance in a way that tempers the board's ability to effect change (Dalton *et al.*, 1999). Previous studies use total assets (Frye *et al.*, 2006a; Lo and Sheu, 2007a) and/or number of employees (Glavas and Piderit, 2009) to quantify the resource base. These studies indicate that the number of employees is negatively related to ROE, which is one of the accounting measures for *profitability*; likewise, total assets are negatively associated to ROE if the other relevant factors are controlled. Natural logarithm of total assets (*assets*) and employee number (*employee*) were obtained to reduce the effects of outliers in the distribution of those variables. Additionally, Collett and Hrasky's (2005) study examines the relationship between the voluntary disclosure of information and the intention to raise external finance; their regression analysis indicates that the voluntary disclosure is positively associated with the intention to raise equity capital, but not with the intention to raise debt capital. Ntim and Soobaroyen's (2013a) controlled for debt-to-equity ratio (*gearing*) in their study on the determinants of voluntary disclosure. Thus, the capital structure of the firms is controlled

in the model for the resource base of the firms. The debt-to-equity ratio is positively associated to ROE if the other related factors are constant.

The author uses executive salary (*salary*) to control the prior knowledge and experience of its managers that result in managerial judgements. Executive compensation strategies include short-term pay (salary and bonus) and long-term compensation (stock grants, options and other perks) (Mallin, 2010). Each of these elements has a different impact on executive incentive, which is supposed to be complementary to each other. In the labour market, employees have more information about their productive capacity than employers (Spense, 1973). Holding other motivational factors fixed, if firm owners decide to cut down managers' compensation, the most capable managers will probably be less incentivised, or even worse they may leave their jobs because they have more information about their productive capacity. The labour market fails in this case. On the principle of market signalling (Spense, 1973) in the labour market, potential managers are the signallers while owners (employers) are the signal receivers. In the labour market, hiring is an investment decision under uncertainty because candidate capacities are not known beforehand. Therefore, employers need to receive relevant signals to build trust to a critical level so that they can self-confirm their choices.

In Spense's (1973) theory, if an owner has perfect information, he will compensate the executive exactly at the corresponding level of the costs of performing the employment contract at the executive's expense. This is unfeasible because in reality the executive has more information about himself/herself than the others. Potential managers (agents) know much more than the employers (principals) about the level of the time, effort and opportunity costs of performing the contract. At the level of financial incentive, if the agent can choose to make more effort (a probability of q) or less effort (a probability of 1-q) assuming that other factors are constant, he/she will choose to make less effort because there is no

marginal financial encouragement whether or not he/she makes an effort in doing the job.

Spense (1973) states that information is efficient at the signalling equilibrium. He demonstrates that informational equilibrium in the market occurs at the point at which an employer's conditional probabilistic beliefs are confirmed to enable him to offer wage schedules and to make hiring decisions. Spense's (1973) signalling theory sets the frame of thought that executive salary stated in the employment contract signals the managerial prior knowledge and experience.

Following previous literature, year effect (*yearD*), industry effect (*industryD*), and country effect (*countryD*) (Lattemann *et al.*, 2009; Menz, 2010; Ntim and Soobaroyen, 2013a) are also controlled in the model. Industry, year and country effects are controlled in the regressions since profitability might vary from industry to industry, from year to year and nation to nation. However, the industry dummies are technically excluded in the quantile specifications used for robustness analysis due to the shortage of the degrees of freedom in the lower quantile regressions if up to 171 industry dummies are estimated.

The coefficients of interest in the Equation 3.1 are $\beta 1$ and $\beta 2$, which are both expected larger than 0 and small based on the previous studies such as Luan and Tang (2007) and Wang and Sarkis (2013). The variables of the Equation 3.1 are listed in Table 3.1, which include the variable name, the variable type and the expected sign of significance and the size of the parameters of the effect of each variable on the predicted response. *yearD*, *industryD* and *countryD* are excluded from this table.

Table 3.1: Predicted Impact of the Explanatory Variables on the Dependent Variable

Variable	Type of variable	Expected sign of significance	Expected magnitude of the coefficient of the explanatory variable
profitability	dependent		
social_dis	key explanatory	+	small
in_director	key explanatory	+	small
salary	control	+	small
employee	control	-	large
assets	control	-	large
gearing	control	+	large
qua_reputation	control	+	small
sales	control	+	large
salesgrow	control	+	large

3.4 Empirical Results

3.4.1 Descriptive Statistics

This section describes the data and provides the first glance at the patterns of *profitability* as the proxy for the value created by the synergic resource of the independent directors (*in_director*) and CSR disclosure (*social_dis*). The former is proxied by the percentage of independent directors in the board membership, and the latter proxied by social disclosure score. Table 3.1 reports the means, medians, standard errors, minimum and maximum values of the dependent and independent variables, for all years and by each year.

Although the dependent variable, *profitability*, measured by ROE, has many outliers, under the law of large numbers and the central limit theorem, the efficiency of *profitability* estimation is more easily accepted as the number of observations increases to a substantially large level even if the normality assumption of *profitability* is violated (Li *et al*.,

2012). Thus the outliers of ROE in the dataset were retained; the outliers might be meaningful in the interpretation of the regression results.

In the first glance, at the 2008 collapse, there are two main features seen in Table 3.1. *First*, ROE was the lowest in 2008 among the seven observed years. The mean of ROE reported for 2008 was even lower than the median, which indicates that a majority of companies in the dataset in 2008 had profit below the average level. *Second*, there is a wide gap in the minimum and maximum values of the percentage of independent directors (0-100), which reveals the inside-outside board composition varies substantially across the firms.

Table 3.2: Descriptive Statistics of the Dependent and Independent Variables

Variable		All	2005	2006	2007	2008	2009	2010	2011
Dependent									
profitability	Mean	16.64	26.46	21.80	19.24	**10.77**	13.52	17.64	19.56
	Median	15.37	21.14	19.45	18.03	**14.58**	12.38	14.25	15.38
	S.D.	28.19	39.71	18.74	18.94	32.51	35.03	21.59	27.10
	Min	-200.77	2.27	-36.54	-77.01	-200.77	-122.40	-51.98	-71.45
	Max	433.12	312.76	133.71	106.66	170.45	433.12	194.38	316.78
Independent									
social_dis	Mean	24.63	24.22	23.35	**18.68**	23.65	26.46	28.21	26.07
	Median	19.30	23.68	20.18	8.77	19.30	22.81	24.56	22.81
	S.D.	19.05	17.25	17.59	16.82	19.31	19.33	19.52	19.58
	Min	3.16	3.12	3.16	3.13	3.13	3.16	3.13	3.13
	Max	83.33	63.16	73.43	68.75	73.44	82.46	82.46	83.33
in_director	Mean	79.05	81.46	81.28	80.99	78.47	77.44	78.92	78.29
	Median	83.33	82.58	82.58	84.62	83.33	81.82	84.62	84.62
	S.D.	14.80	9.15	11.52	12.02	14.63	15.77	15.65	17.38
	Min	0.00	50.00	33.33	33.00	18.18	18.75	11.11	0.00
	Max	100.00	93.33	100.00	100.00	100.00	100.00	100.00	100.00

Notes: *profitability* is measured by ROE; *social_dis* is the social disclosure score measured on the 100-points scale; *in_director* is the percentage of independent directors in the board membership; VIFs are displayed in Appendix 6.

An alternative way of visualizing the change in profitability around financial crisis event in 2008 is to notice the drop in mean profitability (10.77) in 2008 after the drop in mean *social_dis* (18.68) in 2007. This indicates the trend that a considerable number of the firms in the dataset disclosed less the information of their social activities in 2007, the year that the global financial history started to suffer from the shock.

Table 3.2 displays the means, medians, standard errors, minimum and maximum values of the control variables, for all years. The year, industry and country dummies are excluded from these tables. The detailed reasoning for the inclusion of these variables under control is provided in Section 3.3.5.

Table 3.3: Descriptive Statistics of the Control Variables for All Firm-year Observations

Control Variables	Mean	Median	S.D.	Min	Max
Knowledge and experience of managers					
salary	15.01	15.05	.68	10.00	23.32
Resource base allowing for complementarities					
employee	10.53	10.56	1.21	5.31	14.56
assets	10.04	9.95	1.45	6.48	14.90
gearing	135.05	58.09	476.06	.00	10,284.10
Market position					
qua_reputation	5.89	6.00	3.52	1.00	17.00
sales	9.67	9.63	1.13	6.74	12.98
salesgrow	5.85	5.83	19.18	-82.13	208.42

Notes: *salary* is the natural logarithm of total executives' salary of a firm; *gearing* is the debt-to-equity ratio; *qua_reputation* is measured by Fortune rank of reputation for product and service quality (originally from 1 to 17 top down) being converted into 17 for the highest rank down to 1 for the lowest rank; *employee* is the natural logarithm of number of employees; *sales* is the natural logarithm of turnover; *salesgrow* is growth rate of turnover.

It is interesting to see at the first glance that the capital structure (*gearing*) and sales growth vary substantially among the studied firms. The fact that the mean of *gearing* higher than its median indicates that a number of the firms were dependent on debt. Some of the firms in the dataset see the dramatic drop in sales growth, evidenced by the negative ratio as the minimum value of *salesgrow* (-82.13).

3.4.2 Correlation Analysis

In the context of the recent crisis, a first glance at the descriptive data seems to confirm the intuition from the theory that *profitability* responds minimally to a change in CSR disclosure and that of the proportion of independent directors on board.

Table 3.3 shows the bivariate correlation coefficient between each pair of the variables in the dataset. As can be seen in this covariance matrix, both *CSR disclosure* and *in_director* is significantly and slightly correlated with *profitability*, which at first suggests the possibility that a change in the proportion of independent directors is likely to be marginally and positively correlated with a change in profitability of the firms in the dataset, and the trend of change in *CSR disclosure* and *profitability* is likely the same.

There is a significantly large correlation between each pair of the control variables, *sales*, *assets* and *employee*. A visual inspection of the correlation coefficients would indicate concerns for multicollinearity; therefore, the author detected multicollinearity using variance inflation factors (VIF) to measures how much the variance of the coefficients is inflated by multicollinearity. VIF estimates how much the variance of a coefficient is inflated because of linear dependence with other predictors. The general rule of thumb is that VIFs exceeding 10 are signs of serious multicollinearity requiring correction (Belsley *et al.*, 1980). The test results show that the individual VIF of each variable and the mean VIFs

are all well below the rule-of-thumb of 10. The detailed VIF test results are provided in Appendix 6. This demonstrates that the assumption of no perfect multicollinearity is not seriously violated in the models.

Table 3.4: Correlation Matrix

	Variables	1	2	3	4	5	6	7	8	9	10
Dependent											
1	*profitability*	1.00									
Independent											
2	*social_ dis*	0.05*	1.00								
3	*in_director*	0.07**	-0.12***	1.00							
Control											
4	*salary*	0.04	0.09***	0.13***	1.00						
5	*employee*	0.01	0.34***	-0.05*	0.14***	1.00					
6	*sales*	0.02	0.41***	-0.04	0.19***	0.72***	1.00				
7	*gearing*	0.09***	0.01	-0.01	-0.01	0.01	0.01	1.00			
8	*assets*	-0.08***	0.36***	-0.05*	0.19***	0.50***	0.76***	0.09***	1.00		
9	*qua_reputation*	-0.03	0.13***	-0.13***	-0.10***	0.08***	0.10***	-0.01	0.06*	1.00	
10	*salesgrow*	0.16***	-0.04	-0.03	-0.00	0.05*	0.09***	-0.02	-0.00	-0.01	1.00

Notes: * p<.05 ** p<.01 *** p<.001.

3.4.3 Regression Analysis

The statistical process for estimating the relationships among the variables includes the modelling techniques for panel analysis, quantile regression and event study when the focus is on the impact of the regressors (*social_dis* and *in_director*) on the regressant (*profitability*).

3.4.3.1 Panel Analysis

Table 3.5 reports the outputs of the mean regressions of *profitability* upon *social_dis* and *in_director* across the mean distribution of *profitability*. Model 1 reports the result in which the proposed model was run with all of the variables for control. Models 2, 2a, 2b, 2c and 2d reports the results in which the proposed model was run without at least one of the insignificant variables.

The author chose panel analysis as the Breusch and Pagan Lagrangian multiplier test has $P<0.001$ in all of the models, which indicates the presence of panel effects on a change of ROE. The Hausman test results ($P<0.05$) suggest that fixed-effects estimations are preferred than random effects estimations. Thus, the fixed-effect method was allowed for the unobservable firm-specific factors that did not change during the sample period. The time fixed effects also account for changes in the global business environments that affect all industries and countries in the dataset, such as the enactment of the US Sarbanes-Oxley Act of 2002. As a result, the main effect of CSR disclosure and that of independent directors on board are identified purely from the within-firm variation over time.

Table 3.5: Fixed-effect Mean Regression Outputs

Dependent	Model 1	Model 2	Model 2a	Model 2b	Model 2c	Model 2d
profitability	fe	fe	fe	fe	fe	fe
Key explanatory: Firm's position in the network						
social_dis	0.23*	0.24*	0.23*	0.24*	0.22*	0.22*
	(2.27)	(2.28)	(2.25)	(2.28)	(2.15)	(2.16)
in_director	-0.10	-0.11		-0.11	-0.11	
	(-0.70)	(-0.75)		(-0.72)	(-0.73)	
Control						
Knowledge and experience of managers						
salary	-0.50		-0.71	-0.56	-0.37	
	(-0.26)		(-0.38)	(-0.29)	(-0.20)	
Resource base allowing for complementarities						
employee	-22.61**	-22.70**	-22.44**	-21.31**	-21.76**	-20.04**
	(-3.09)	(-3.11)	(-3.07)	(-3.22)	(-2.98)	(-3.05)
assets	3.02	3.16	3.22		3.41	
	(0.41)	(0.43)	(0.44)		(0.47)	
gearing	0.01*	0.01*	0.01*	0.01*	0.01*	0.01*
	(2.34)	(2.34)	(2.36)	(2.37)	(2.44)	(2.52)
Firm's market position						
qua_reputation	-0.45	-0.45	-0.45	-0.45		
	(-1.47)	(-1.46)	(-1.48)	(-1.49)		
sales	15.79*	15.65*	15.70*	16.56*	15.27*	15.95*
	(2.26)	(2.25)	(2.25)	(2.47)	(2.19)	(2.38)
salesgrow	0.15**	0.15**	0.15**	0.15**	0.14**	0.14**
	(3.16)	(3.16)	(3.15)	(3.21)	(3.06)	(3.08)
L.profitability	-0.16***	-0.16***	-0.16***	-0.16***	-0.15***	-0.15***
	(-3.88)	(-3.88)	(-3.88)	(-3.89)	(-3.77)	(-3.77)
Others						
2006.year	N	N	N	N	N	N
2007.year	N	N	N	N	N	N
2008.year	Y	Y	Y	Y	Y	Y
2009.year	Y	Y	Y	Y	Y	Y
2010.year	N	N	N	N	N	N
2011.year	N	N	N	N	N	N
industry	included	included	included	included	included	included
country	included	included	included	included	included	included
N	1194	1194	1194	1194	1194	1194
R-sq within	0.11	0.11	0.11	0.11	0.11	0.11

Notes: *t* statistics in parentheses; * p < .05, ** p < .01, *** p < .001. *l.profitability* is one-year-lag data of *profitability*. The coefficients of industry dummy and country dummy are not reported in this table. With regard to the year factor, N is the short form for insignificant coefficient while Y is the short form for significant coefficient.

The insignificant variables in Model 1 were alternatively dropped out of the regressions; the outputs are reported in Models 2, 2a, 2b, 2c. Model 2d reports the regression output when all of the insignificant variables are not included in the specification.

In this panel analysis, the identification of $\beta 1$ and $\beta 2$ comes from the combinations of cross-year, cross-industry and cross-country variations in the CSR disclosure and in the percentage of independent directors on board when the other factors are constant. These coefficients thus estimate the change in the value added by independent director using CSR disclosure to win the goodwill of the stakeholders in their networks; this is transformed into increased profitability as illustrated by Figure 3.2.

The evidence from the panel regressions are to be as followed. There is evidence that *social_dis* has significant and positive impact on *profitability* across the mean distribution of ROE ($\beta 1$=.23, P value<.05 in Models 1 and 2a; $\beta 1$=.24, P value<.05 in Model 2 and 2b; $\beta 1$=.22, P value<.05 in Model 2c and 2d). However, there is no significant evidence of the impact of *in_director* alone on *profitability* in the same sample of the firms.

Regarding the control variable for knowledge and experience of managers of a firm in the proposed theoretical model, there is no significant evidence of the impact of *salary* on *profitability* in the the firms in the dataset. The author deliberately compared the behaviour of *profitability* that might have changed in a firm with and without the impact of *salary*, which is the measure for knowledge and experience of the firm's managers. The fixed-effect regression result as seen in the regression outputs are not considerably different.

Regarding the control variables for resource base allowing for complementarities, there is significantly and negatively large effect of the number of employees in the firm and profitability of that firm ($\beta 4$=-22.61, P value<.01 in Model 1; $\beta 4$=-22.70, P value<.01 in Model 2; the results are not much different in Models 2a, 2b, 2c, 2d). Meanwhile, there is no significant evidence of the impact of company assets on *profitability* in the same sample of the firms. The impact of the capital structure on *profitability* is too little to count although it is significantly positive ($\beta 6$=0.01, P value<.05 in all of the regression outputs).

Regarding the control variables for a firm's market position, there is no significant evidence of the impact of company reputation for product quality on *profitability* in the firms. However, there is a significant great influence of sales on *profitability* ($\beta 8$=15.79, P value<.05 in Model 1; $\beta 8$=15.65, P value<.05 in Model 2); sales growth affects *profitability* significantly and positively ($\beta 9$=0.15, P value<.01 in Model 1and Model 2). The level of *profitability* of the previous year affects *profitability* of the current year significantly and negatively ($\beta 10$=-0.16, P value<.001 in Model 1and Model 2). The coefficients reported in Models 1, 2, 2a, 2b, 2c, 2d are not much different in terms of their magnitude, sign and level of significance.

It is worth to point out the impact of the year dummy variable on *profitability* although this is not a key explanatory in the specifications. The year 2008 and 2009 in which the global finance were in the deep end of the crisis have significant negative impact on *profitability*.

3.4.3.2 Quantile Regressions

One of the limitations in Schmidt and Keil's (2013) model is the assumption that customer willingness to pay was unbounded. Therefore, H1 and H2 were tested in the condition of relaxing this assumption in the different quartiles of *profitability* to see if the findings hold.

Table 3.6: Quantile Regression Outputs

Dependent variable	Model 3 lower	Model 4 lower	Model 5 higher	Model 6 higher	Model 7 lower	Model 8 lower	Model 9 higher	Model 10 higher
profitability	25%	50%	50%	25%	25%	50%	50%	25%
Independent variable								
Firm's position in the network								
social_dis	0.08***	0.06**	0.04*	0.05	0.07***	0.06**	0.05**	0.05
	(-4.24)	(-2.91)	(-2.2)	(-1.14)	(3.68)	(3.06)	(2.67)	(1.15)
in_director	0.06*	0.06*	0.03	0.02	0.05	0.06*	0.04	0.02
	(-2.15)	(-2.25)	(-1.05)	(-0.29)	(1.77)	(2.31)	(1.30)	(0.30)
Control variable								
Knowledge and experience of managers								
salary	-0.59	0.31	0.8	0.35				
	(-1.35)	(-0.56)	(-1.63)	(-0.39)				
Resource base allowing for complementarities								
employee	0.35	0.24	-0.72*	-1.63*	0.32	0.31	-0.71*	-1.58
	(-1.02)	(-0.62)	(-2.00)	(-1.97)	(0.84)	(0.86)	(-2.15)	(-1.88)
assets	-2.52***	-3.36***	-3.82***	-3.21**	-2.57***	-3.29***	-3.67***	-3.29**
	(-8.22)	(-9.58)	(-9.05)	(-2.93)	(-7.52)	(-10.12)	(-9.53)	(-2.95)
gearing	-0.00***	0.00**	0.02***	0.04***	-0.00***	0.00**	0.02***	0.04***
	(-4.36)	-3.15	-26.69	-25.72	(-3.77)	(3.24)	(30.46)	(25.45)
Firm's market position								
qua_reputation	0.22**	-0.05	-0.21*	-0.2	0.20*	-0.06	-0.22**	-0.22
	(-2.68)	(-0.49)	(-2.33)	(-0.87)	(2.14)	(-0.67)	(-2.64)	(-0.96)
sales	3.80***	3.24***	3.28***	4.11**	3.85***	3.14***	3.23***	4.14**
	(-7.43)	(-5.74)	(-5.71)	(-2.96)	(6.73)	(6.02)	(6.13)	(2.91)
salesgrow	0.12***	0.13***	0.08***	0.04	0.12***	0.13***	0.08***	0.04
	(-5.95)	(-7.45)	(-4.09)	(-0.85)	(5.57)	(8.05)	(4.55)	(0.79)
Other control variable								
2006	N	N	N	N	N	N	N	N
2007	N	N	N	N	N	N	N	N
2008	Y	Y	N	N	Y	Y	N	N
2009	Y	Y	N	N	Y	Y	N	N
2010	Y	Y	N	N	Y	Y	N	N
2011	Y	Y	N	N	Y	Y	N	N
countryD	included	included	included	included	included	included	included	included
N	454	909	908	455	454	909	908	455
Pseudo R^2	0.08	0.09	0.09	0.10	0.08	0.09	0.09	0.10

Notes*: t* statistics in parentheses; * p < .05, ** p < .01, *** p < .001; the coefficients of country dummy are not reported in this table; industry dummy is not included in the quantile models to give enough degree of freedom for running the models; *l.profitability* was not included in the quantile regressions because this time-series operator was not allowed in the quantile models; N is the short form for insignificant coefficient while Y is the short form for significant coefficient.

Particularly in this study, the author examined whether the magnitude and the significance of the impact of *social_dis* and that of *in_director* change when the firms are below the median of ROE, and compare those impacts with the firms above the median of ROE. The quantile regression results are presented in Table 3.6.

In Table 3.6, Model 3, Model 4, Model 5 and Model 6 report the quantile regressions across the median distribution of *profitability* at lower 25%, lower 50%, higher 50% and higher 25% respectively, controlling for the knowledge and experience of managers (*salary*). Model 7, Model 8, Model 9 and Model 10 focus on the impact of independent directors using CSR information on the value added to a firm's resource, and ignored the impact of the knowledge and experience of the firm's managers on this relationship.

Due to the considerable reduction in the number of observations when the data were fit into the quantile model, the industry dummy variable, *industryD* (for 171 industries as classified by Bloomberg) was excluded in the quantile regressions so that the degree of freedom is large enough to run the quantile specifications.

The evidence obtained from the quantile regressions are that the magnitude and the significance of the impact of *social_dis* are generally greater for less profitable firms, and even more so when there are higher proportion of the loss-making firms, i.e. in the 25% percentile of ROE median distribution. (β=.08, P value<.001 in Model 3; β=.06, P value<.01 in Model 4; β=.04, P value<.05 in Model 5).

The author repeated this comparison exercise for firms with ROE above and below the median without *salary* in the models. Once again, *social_dis* and *in_director* are significantly associated with *profitability*, but this advantage is smaller in firms with more profitability (β=.07, P

value<.001 in Model 7; β=.06, P value<.01 in Model 8; β=.05, P value<.01 in Model 9).

There is evidence that *in_director* has significant and positive minimal impact on *profitability* in the firms that is below the median of ROE (β=.06, P value<.05 in Model 3; β=.06, P value<.05 in Model 4). This significant evidence was also obtained in the results of the regressions without *salary* in the model run on the data of the firms in the lower 50% percentile of the ROE median distribution (β=.06, P value<.05 in Model 8).

Interestingly, the significance of the impact of *in_director* on *profitability* vanishes for the higher profitable firms, i.e. above the median distribution of ROE. Surprisingly, in the most profitable firms, i.e. in the higher quartile of the median distribution of ROE, neither the significance effect of *social_dis* not that of *in_director* on *profitability* could be found.

Regarding the control variable for knowledge and experience of managers of a firm in the proposed theoretical model, the author deliberately compared the behaviour of *profitability* that might have changed in a firm with and without the impact of *salary*, which is the measure for knowledge and experience of the firm's managers. The quantile regression results as seen in Model 3-10 are not considerably different; there is no significant evidence of the impact of *salary* on *profitability* in the firms in the dataset.

Regarding the control variables for resource base allowing for complementarities, there is significantly and negatively effect of the number of employees in the firm on profitability of the firms above the median of ROE (β_4=-0.72, P value<.05 in Model 5; β_4=-1.63, P value<.05 in Model 6; β_4=-0.71, P value<.05 in Model 9).

There is a consistently significant and negative evidence of the impact of company assets on *profitability* across the median ROE distribution of the firms. Meanwhile, the impact of the capital structure on *profitability* is also too little to count although it is significantly positive in all of the quantile regression results.

Regarding the control variables for a firm's market position, there is an inconsistent and significant evidence of the impact of company reputation for product quality on *profitability* between the unprofitable firms and the profitable ones. Statistically, this effect is positive for the firms in the lower 25% percentile of ROE ($\beta 7$=0.22, P value<.01 in Model 3; $\beta 7$=0.20, P value<.05 in Model 7); in contrast, it is negative for the firms above the median of ROE ($\beta 7$=-0.21, P value<.05 in Model 5; $\beta 7$=-0.22, P value<.01 in Model 9).

There is a significant positive influence of sales on *profitability* in all of the quantile regression results. This impact is visually larger for the most profitable firms that fall in the higher quartile of ROE distribution. Sales growth affects *profitability* significantly and positively in the results but not seen in the quantile regression of the most profitable firms, i.e. in the higher 25% percentile of the dataset.

It is worth to point out the impact of the year dummy variable on *profitability* although this is not a key explanatory in the specifications. The period from 2008 to 2011, in which the global finance was in the deep end of the crisis in 2008-2009 and slowly recovered in 2010-2011, have significant negative impact on *profitability* of the firms below the median of ROE.

3.4.3.3 Event Study

Table 3.7: Regression Outputs: Event Study

Dependent variable	**Before crisis**		**Peak of crisis**		**Recovery years**	
profitability	Model 11 lower 50%	Model 12 higher 50%	Model 13 lower 50%	Model 14 higher 50%	Model 15 lower 50%	Model 16 higher 50%
Independent variable						
Firm's position in the network						
social_dis	0.03	0.05	0.08**	0.08*	0.06***	-0.02
	(1.02)	(1.42)	(2.62)	(2.11)	(3.35)	(-0.78)
in_director	0.08	0.02	0.04	-0.00	0.04	0.05
	(1.92)	(0.42)	(0.86)	(-0.01)	(1.63)	(0.94)
Control variable						
Knowledge and experience of managers						
salary	0.48	-0.06	0.17	-0.38	0.59	1.32
	(0.58)	(-0.08)	(0.24)	(-0.65)	(0.93)	(1.04)
Resource base allowing for complementarities						
employee	-0.53	-1.08	-0.06	-0.35	1.11**	0.01
	(-0.98)	(-1.84)	(-0.10)	(-0.52)	(3.01)	(0.02)
assets	-3.07***	-4.05***	-3.89***	-3.87***	-3.20***	-1.87*
	(-6.16)	(-5.58)	(-7.37)	(-4.88)	(-10.06)	(-2.26)
gearing	-0.00	0.01***	0.00**	0.05***	0.01***	0.01***
	(-1.57)	(4.52)	(2.87)	(29.30)	(42.22)	(38.15)
Firm's market position						
qua_reputation	0.28	-0.24	-0.17	-0.28	-0.15	-0.18
	(1.94)	(-1.45)	(-1.16)	(-1.57)	(-1.75)	(-1.23)
sales	4.50***	4.15***	3.76***	2.86**	2.51***	1.36
	(5.80)	(4.39)	(4.49)	(2.64)	(4.74)	(1.33)
salesgrow	0.11***	0.06	0.21***	0.08	0.14***	0.10**
	(5.03)	(1.83)	(8.59)	(1.91)	(7.17)	(2.71)
Other control variable						
countryD	included	included	included	included	included	included
N	489	303	706	306	622	299
Pseudo R^2	0.09	0.08	0.08	0.13	0.12	0.13

Notes: *t* statistics in parentheses; * p < .05, ** p < .01, *** p < .001; the coefficients of country dummy variable are not reported in this table; industry dummy is not included in these models to retain enough degree of freedom for running the models; *l.profitability*, one-year-lag data of *profitability,* is not included in these models to retain the acceptable number of observations for modelling.

There might be unobserved systematic differences across firms in the economic environment at the time of recession. These may operate at the firm level or may be specific to the years of the study period. Unlike the panel analysis and the quantile regression analysis, the event-study approach uses the observations per stage - before, during and after the event. This approach was used to investigate the change in profitability around the time that the event happened. As can be seen in Figure 2.1, 2008-2009 is the stage that the global financial history is under the shock. A similar pattern might emerge when the author exploited the time dimension in the data and focus on the mean regressions for the sub-set of the firms below the median of ROE and the remaining sub-set of the firms above the median of ROE.

In Table 3.7, the author compared profitability in the period of 2005-2007 as pre-crisis, 2008-2009 when the event of the crisis happened at its peak, and the recovery years 2010-2011 after the peak of crisis. Employing pre-crisis data allows for an unbiased assessment (Hoorn, 2015). The dataset was split into three subsets was split in line with the period before, during and after the peak of the crisis.

There is evidence that, when the financial crisis was at its peak (2008–2009), *social_dis* has significant and positive minimal impact on *profitability* in all of the firms, no matter that is below or above the median of ROE (β=.08, P value<.01 in Model 13; β=.08, P value<.05 in Model 14). However, after the crisis, only the firms in the lower median of ROE distribution saw the significant and positive minimal impact of *social_dis* on *profitability* (β=.06, P value<.001 in Model 15). Interestingly, while most firms in the dataset tend to recover after the deep end of the financial crisis, the effect of *social_dis* on *profitability* is only pronounced for the less profitable firms.

There is no evidence of the effect of *salary* on *profitability* in Table 3.7. This once again raises the issue of the importance of this variable, used as the measure for the knowledge and experience of managers, in the proposed econometric model.

The number of employees is only significantly and positively related to *profitability* in Model 15. However, consistently, the company assets have significant and negative effect on *profitability* in all of the results in Table 3.7. Meanwhile, the impact of the capital structure on *profitability* is also too little to count although it is significantly positive in almost of the results.

Regarding the control variables for a firm's market position, there is no significant evidence of the impact of company reputation for product quality on *profitability* between the unprofitable firms and the profitable ones. There is a significant positive influence of sales on *profitability* in all of the results. This impact is visually larger before the crisis happened. Sales growth affects *profitability* significantly and positively in the results of the firms below the median of ROE distribution in all of the three periods. This effect is also significant and positive for the firms above the ROE median after the peak of the crisis.

3.4.3.4 Robustness Check

The procedure of diagnostic tests of the regression models was strictly applied in three steps. The Hausman test results for the mean models demonstrate that fixed-effects specification is preferred. The other diagnostic test results show that the regression models do not seriously violate the OLS assumptions. The endogeneity problem was addressed. For the quantile model, the results show that the model specification is statistically accepted; the linearity assumption is not violated. The

following is the detailed description of the procedure to analyse the robustness of the regressions.

OLS assumptions

The author tested the OLS assumptions related to linearity, heteroskedasticity, multicollinearity and series correlation. Regarding the assumption of linearity, P<.01 in all of the models indicates that the non-linear relationship hypotheses are rejected. Regarding the assumption of heteroskedasticity, the robust check results held for all of the models suggesting the assumption of constant variance is not seriously violated. Regarding the assumption of multicollinearity, the VIFs are all well below the rule-of-thumb value of ten, demonstrating that the assumption of independent variables is not seriously violated. Woodridge's (2002) test for the assumption of series correlation was applied. P-value<.05 in the test result shows that the assumption of no series correlation is not seriously violated.

Apart from that, the specification test results for the quantile models (Model 3-10) demonstrate that these models are not miss-specified.

Endogeneity

There are intrinsically unobserved elements in the dependent variable that cannot be estimated in the error term in a statistical model. The key explanatory variable is endogenous when there is a correlation with the error term (Wooldridge, 2013). Generally, a loop of causality between the independent and dependent variables of a model leads to endogeneity (Jia and Skaperdas, 2012).

The next two steps are to investigate if *social_dis* is endogenous with the error term; that is, to investigate the likely association between either *social_dis* and the residual of the models. In the first step, the residuals were obtained from the pooled OLS models using *profitability* as the dependent variable. The correlation between *social_dis* and each of the

residuals was examined, demonstrating that there is no significant correlation between *social_dis* and each of the residuals (P>0.05).

The second step further investigated the association between *social_dis* and each of the residuals using fixed-effects estimations. The regression results display that there is a insignificant relationships between *social_dis* and each of the residuals (P>0.05). Therefore, *social_dis* is exogenous to the error term in the models.

Next, the reversal consequence of *profitability* on *social_dis* was investigated to see whether the reversal impacts caused by endogeneity are significant. The same control variables as in the main models were used. Unfortunately, the regression coefficient of *social_dis* is statistically significant; thus, the 2SLS method was used to further examine if endogeneity is not seriously violated in the models.

Bloomberg environmental, social and governance disclosure score (*esg_disclose)* was used as the instrument variable of the regressor (*social_dis)* to test if *social_dis* is exogenous*. esg_disclose* is correlated to *social_dis* but uncorrelated to the error term of the models. The test result shows that hypothesis of exogenous regressor cannot be rejected (P=0.50), which indicates that *social_dis* is exogenous in the model.

The same procedure was followed for all of the models. The test result also shows that hypothesis of exogenous regressor cannot be rejected (P=0.50), which indicates that *social_dis* is exogenous in the model. This suggests that endogeneity problem is not seriously violated in the models.

For the other key explanatory variable, *in_director*, the examination of the endogeneity problem was done. Generally, a loop of causality between

the independent and dependent variables of a model leads to endogeneity (Jia and Skaperdas, 2012). To examine this problem in the models, first of all, *profitability* was alternatively regressed against *in_director* and the control variables to ensure that the direction of causality is from *in_director* to *profitability*, not the reverse (Chen, 2014). Fortunately, there is no loop of causality between *in_director* and *profitability,* and vice versa. This supports the conclusion that *in_director* is exogenous in the models.

3.4.3.5 Interpretations and Discussions

In this section, as already hypothesised, the interpretation and discussions on the regression results are centred on the impact of the regressors (*social_dis* and *in_director*) on the regressant (*profitability*).

The evidence suggests that, regardless that *in_director* might or might not have insignificant impact on *profitability*, there is a trend that CSR disclosure is likely to cause a minimal increase in *profitability* in all of the firm-year observations if having independent directors in the model.

The empirical findings from Model 3, Model 4 and Model 8 support H1 and H2 in the condition of less profitable firms, i.e. below the median of ROE distribution. The empirical findings from Model 13, Model 14 and Model 15 imply that there was a change in the impact of CSR disclosure on profitability when the event changed from the years before crisis to the years when the crisis was at its peak. This impact became significant and positive when firms were in the turmoil. However, during the recovery years, i.e when the shock started to be over, this impact only remained significant and positive for the firms below the median of ROE.

The interpretations of the regression outputs also focus on one of the control variables, *salary.* There is no significant impact of *salary* on *profitability* found in all of the regression results obtained this study

although following Spense (1973) salary could be used to quantify managers' knowledge and experience. This might raise the need of another the measure for managers' knowledge and experience in future studies and/or question on the importance of managers' knowledge and experience in the proposed theoretical model.

Overall, the effectiveness of independent directors is not clearly demonstrated in Table 3.5. However, their effectiveness became clear in Table 3.6. Interestingly, Table 3.6 shows the evidence that independent directors were of more importance in unprofitable firms. The evidence shows that CSR disclosure was of more significance when the firms were at the peak of the financial crisis. During 2010 and 2011 when the global financial situations started to recover, CSR disclosure remains a significant impact to profitability in the firms that had ROE below the average.

The results might recommend that the firms would have had more chance to improve profitability if independent directors' tasks were closely linked with CSR disclosure. Independent directors combining with stakeholders through CSR disclosure might have been an efficient strategy during the recent financial crisis. The study suggests that embedment of stakeholder approach into the mechanism of using independent directors could be one of the effective solutions to recover the costs related to hiring independent directors.

These results confirm that CSR responds initially to a financial crisis by adding a small margin of profitability to the firms under the financial difficulty. Such confirmation supports the social network theory, resource dependence theory and agency theory. The confirmation is stronger in the subset of unprofitable firms; this emphasises the need for the importance of the independent directors in the unprofitable firms.

The positive effect caused by this synergy on increased ROE may recommend this synergy be one of the factors that explain how and why to increase willingness-to-pay. This confirms Schmidt and Keil's (2013) theory. The more diverse the relationships of a firm are to its customers, suppliers, and alliance partners, the better it can access information; subsequently, the closer its willingness to pay for a resource (ex ant resource value) will be transformed into the market impact of the resource (ex post resource value).

3.5 Conclusions of the Chapter

This study investigates how and why a regime of corporate governance using independent directors and CSR disclosures, affects profitability of global firms in multiple countries. Grounded by Schmidt and Keil's (2013) work, this study proposes a model of using independent directors and CSR disclosure together to add value to firms. The study presents the empirical regression results in favour of the proposed model. There was a chance that the combined resources of independent directors and their stakeholder networks built and maintained through CSR disclosure are minimally and positively associated with profitability in the FWMA firms from 2005 to 2011. The results from testing H1 and H2 support the social network theory, resource dependence theory and agency theory.

This study might recommend the extension for Schmidt and Keil's (2013) function of the conditions and mechanism that resources become value added to a firm's profit before a decision of acquiring it or building it is made. The study results suggest that the synergy of independent directors and stakeholders should enhance a firm's position in inter-organisational networks which gives the firm more accessibility to relevant information. This implies that independent directors affected profitability from their effort of using CSR disclosure during the recent

global financial crisis; therefore, stakeholder approach should be embedded in the traditional tasks of independent directors.

However, the study challenges the use of salary as the proxy for measurement of managers' prior knowledge and experience. There is no significant impact of *salary* on *profitability* found in all of the regression results obtained this study although following Spense (1973) salary could be used to quantify managers' knowledge and experience. This might raise the need for another the measure for managers' knowledge and experience in future studies and question the conditions of managers' knowledge and experience in the theoretical model.

Earlier, Cheng and Courtenay (2006) finds the evidence that firms with a higher proportion of independent directors on the board are associated with higher levels of voluntary disclosure. Donnelly and Mulcahy (2008) report that an increase in voluntary disclosure is positively related to a rise in the number of non-executive directors on the board. Still, there is a concern on the quality of voluntary disclosure given the problem of information asymmetry (Akerlof, 1970; Spense, 1973; Stiglitz, 1975). Thus, this study results point to a need for independent directors' supervision of CSR activities and the importance of audit of CSR disclosure due to independent directors who might take advantage of this type of information disclosure.

The study implies that there should be a global convergence of the governance principles where CSR and independent board members are linked together for improvement of sustainable profitability. The study offers investors the idea that investments in companies with independent directors who are active in social networking are likely to be a worthy investment; there is likelihood of realizing sustainability-related opportunities.

Theoretical contributions. To the best of the author's knowledge, this is the first study that proposes the extension and empirically tests Schmidt and Keil's (2013) theory of the conditions and mechanisms that make resources valuable to a firm before a decision on acquiring or building it is made. The proposed model built on Schmidt and Keil's (2013) function suggests that independent directors are likely to enhance shareholders' wealth by using CSR disclosure. Positioning in the intersection of two research streams, CSP - financial performance and board structure - financial performance, this study contributes to the advancement of global theories of corporate governance. This study confirms the social network theory, resource dependence theory and agency theory, suggesting the link among these theories in the global context.

Practical contributions. The study offers corporate managers, policy makers and investors the insight that profit might be gained from the combined resources of independent directors and stakeholders when the firms are in recession. Independent directors with more CSR engagement might perform better in maximizing shareholders' wealth. It is, thus, recommended that CSR projects should be involved with independent directors to maximize efficiency. There is a need for independent directors' task of overseeing CSR activities.

This study has two main limitations worthy of further research. The *first* comes from the objective paradigmatic approach since it attempts to quantify human attitudes and behaviour embedded in social attribute constructs of CSR. The study rests on the assumption that human behaviour is observable and that observers have the time and ability to watch all human behaviour (Eisenhardt, 1989). The *second* comes from the impossibility of generalisation of the findings in the context of small and medium firms as the firms that do not meet the turnover selection criteria of Fortune survey are not included in the dataset. Future research into the issues is expected to fill these research gaps.

Chapter 4: Executive Remuneration, Corporate Social Performance and Profitability

This study investigates the impact of executive remuneration combining with CSR on profitability, and the influence of each element of executive remuneration on CSR. The study finds that a combination of executive incentive and CSR disclosure is likely to improve profitability particularly during the financial crisis years. In terms of the granular elements of an executive compensation package, there is a possibility that salary and stock drives executives to improve CSR disclosure; this, in turn, positively influences the CSR reputation and chance for profitability. The study results hold for different robustness checks. The study confirms the agency theory, suggesting that if executives are more generously paid, particularly with sizable salary and stock, they will disclose more CSR information to build reputation for CSR. However, recognizing the problem of information asymmetry in practice, the study raises the concern on managerial manipulation of CSR disclosure. The study justifies that the public have good reason for being uncomfortable with a firm offering excessive executive pay whilst displaying a lack of social responsibility, especially during the recent financial crisis. The study points to the need for good governance mechanisms to minimize the risk of managerial manipulation in voluntary disclosure.

4.1 Chapter Introduction

One of the reasons for the global financial crisis has been blamed on top management remuneration policies, where inappropriate executive incentives played a role in encouraging opportunistic behaviour (Turner,

2009a). However, agency theory suggests that executive compensation stimulate the executives to work towards financial performance (Jensen and Meckling, 1976). While public outrage has focused on the size of the pay packages at failed financial institutions, it is perhaps more important to focus on the structure of compensation and the process of setting compensation to prevent future crises (Faulkender *et al.*, 2010) and responsibility of executives. Therefore, the question of how and why CSR and executive remuneration are likely to influence financial performance during the financial crisis is the topic that is worthy of study given the existing gap in the literature.

This study is positioned in the intersection of two research streams, CSP-financial performance and executive remuneration-financial performance. The landmark episodes of the decade, the financial crisis and the 2008 bursting of the credit market, have drawn attention to the size and structure of executive pay plans and their possible role in CSR agenda.

This study discusses the key issues in the debate on executive pay and social responsibility of the executives. Applying the stakeholder theory and agency theory, this chapter investigates two research issues: (1) *how and why a synergy of executive remuneration and CSP disclosure affects financial performance*, and (2) *how and why executive remuneration elements influence CSP in the context of FWMA firms*. The chapter goes on to explain why firms pay executives generously, and why firms have engaged in CSP disclosure in the period of the economic downturn.

This study uses a dataset of global firms at firm-level and splits the data into three scenarios: before the global financial crisis (2005-2007); when the crisis was at its peak (2008-2009); and during the recovery years (2010-2011). Employing pre-crisis data allows for an unbiased assessment (Hoorn, 2015). The crucial question raised is whether

companies would implement CSR initiatives with the same intensity in each scenario.

This study finds the probabilities that: (1) the interaction of executive compensation with CSP disclosure positively affects ROE, (2) among the granular elements of an incentive package, salary and stock positively drive executives to disclose more CSR information; furthermore, in these firms, CSR disclosure positively affects CSR reputational rating. These probabilities are significant before the peak of the financial crisis (2005-2007) and after the unprecedented shock (2010-2011). The level of significance and the magnitude of the influence of executive compensation combining with CSP disclosure on ROE rise as the ROE increases.

The theoretical contribution is the idea of the theoretical link between the stakeholder theory and agency theory. The findings from this study support the advancement of global theories of corporate governance (Zattoni and Ees, 2012) with the result that there is a global convergence of governance principles where CSR in combination with executive compensation is positively associated to profitability.

The methodological contribution of this study is the use of a world-wide dataset, in which two types of CSP proxy data, one from Fortune and the other from Bloomberg, are concurrently used to improve the reliability and validity of the empirical findings.

Empirically, this study shows the evidence of a positive impact of CSP on financial performance when firms have good compensation for responsible managers. The study explains why firms offered huge compensation packages to their executives and why there was an increase

in the intensity of CSR communication in the period of the recent financial crisis.

However, this study raises a concern of the trustworthiness of CSR disclosure and CSR reputational rating, given the agency problem and the problem of information asymmetry in which there is usually the mixture of *bad* firms and *good* firms in the market. This concern points to the need for independent audit regimes on disclosure of CSR activities.

4.2 Theoretical Framework and Hypothesis Development

Prevailing in the academic debate is the property-right-oriented argument put forward by Friedman (1962). He criticized firms that serve any interests other than those of shareholders, who are the most important stakeholders of a corporation from his perspective. He argues that profit itself is a social good, and society is best served when corporations maximise shareholder benefit. While he acknowledges legal and ethical constraints on business activities, he emphasised that firms should not harm society; he denies company responsibility for the maintenance and improvement of society. His arguments view a company as a "black box" to meet relevant marginal conditions with respect to inputs and outputs, thereby maximising profit. This school of thought postulates that shareholders wish to maximise the value of their shares. As a result, managers who fail to maximise shareholders' wealth violate shareholders' property rights because managers are hired to generate firm value.

In an attempt to explain the decision-making process in modern firms in terms of goals, expectations and choice-making procedures, Cyert and March (1963) assert that managers respond to a variety of incentives which benefit their self-interest. Later on, agency theory (Jensen and Meckling, 1976) analyses the problem of maintaining control over agents

who lack proximity to their principals and who therefore exhibit behaviours and/or values that are costly for firm owners to monitor and correct.

From the stakeholder perspective, business and society scholars focus on the interdependencies of businesses with other societal elements, therefore looking at firms as corporate citizens (Matten and Crane, 2006). CSR arises because of these interrelationships (Wood and Jones, 1995), which create shared value for both shareholders and other stakeholders (Porter and Kramer, 2006; Porter and Kramer, 2011). Creating the framework for the business and society literature is stakeholder theory (Freeman, 1984); this perspective is in favour of CSP as the responsiveness that companies should adopt for the interests of their stakeholders. Barnett (2007) suggests CSR as a form of corporate investment characterised by a dual orientation towards the improvements of social welfare and stakeholder relations. This suggestion, which mentions stakeholder relations, might imply some return on investment in CSR projects from stakeholder engagement. In this setting, it is necessary to review the literature to develop hypotheses related to the linkage between CSP and financial performance intervened by manager incentive.

Impact of Executive Remuneration on Profitability in the Firms that Engage in CSR

Jensen and Meckling (1976) developed the concept of agency costs incurred in any contractual arrangement between the owner and an executive of a corporation. They define agency costs as the sum of (1) the monitoring expenditures by the principal, (2) the bonding expenditures by the agent, and (3) the residual loss. The principal can limit agency problems by incurring monitoring costs to limit the aberrant activities of the agent, and by paying the agent to expend resources. This guarantees

that the agent will not take actions harming the principal, and ensures that the principal will be compensated if the agent takes such actions. In addition, there will be some divergence between the agent's decisions and those decisions which would maximise the welfare of the principal. The dollars equivalent of the reduction in welfare experienced by the principal due to this divergence is residual loss. These are the unavoidable costs of the separation of ownership and control (Smith, 1776; Berle and Means, 1932).

An agent and a principal have inherent information asymmetry (Akerlof, 1970) according to which the principal cannot ensure that the agent always acts for the principal's best interests, particularly in terms of the activities that are useful to the principal but costly to the agent, and/or the activities that are costly for the principal to observe. The main issues come from the interest conflict between principal and agents. Shareholders are interested in firm value and stock return, while executives are keen on compensation. As a person has the propensity to be opportunistic and self-interested (Cyert and March, 1963), a conflict of interests may arise between persons; consequently, moral hazard may harm the related party. Therefore, the essential thing is how to match the interests and goals of both parties in order that both grow and receive benefits.

Agency theory suggests that the interests and goals of shareholders and executives can be congruent if firms offer financial incentives to executives. Agency cost reducing methods include establishment of compensation systems which identify the manager's interests more closely with shareholders' ones.

Managers may expend resources as their privilege in return for a guarantee to shareholders that they would limit activities that might be

costly the firm. Bonding costs, therefore, limit managerial ability to take advantage of opportunities to make himself better off while harming the company's owners. Agency cost theorists suggest that these bonding expenditures should take the forms of contractual terms that require executives to have financial accounts audited and contractual limitations on the managers' decision-making power which imposes costs on the firm. The manager finds that his interest in seeing net increments in his wealth (which compensates his efforts at agency cost reduction, thus increasing corporate profitability) is more valuable than the selfish perquisites given up. Jensen and Murphy (2004) consider a well-designed remuneration package as the factor that motivates executives to take actions that improve profitability and avoid actions that destroy firm value.

A corporate pay system, if appropriately structured, can help direct individual efforts toward strategic business objectives, thereby enabling the firm to reach higher financial performance levels (Gómez-Mejia and Barkema, 1998). Murphy (1985) found that salary and bonuses for top management in large US corporations are positively related to shareholder returns. Jensen and Murphy (2004) considered a well-designed remuneration package to be the factor that motivates executives to take actions that improve profitability and avoid actions that destroy firm value.

In the crisis profits evaporated. The financialisation of the firm resulted in highly leveraged companies with ballooned stock prices (Davis, 2009). It became a standard practice to give executives large amounts of stock-based compensation. Under this incentive regime, the most highly rewarded executives were those who could influence expectations and exploit opportunities from the vacillation in these expectations (Faulkender et al., 2010). Consequentially, the dreadful social and

environmental performance of managers might indicate collapsing stock prices (Martin et al., 2010).

However, it has been noted that in the recent financial crisis, excessive top management remuneration did not reflect the dramatic falls in firm value. Inappropriate executive incentive structure has been criticised as partially encouraging the opportunistic managerial behaviours which led to the financial crisis (Turner, 2009b). As a result, an important question that previous literature on the relationship between CSP and financial performance has overlooked is whether financial incentive factor influences executives' commitments to shareholders and stakeholders.

On the one hand, managers are contracted by firm owners to operate the black box (Leontief, 1986) to maximise shareholders' value. On the other hand, the stakeholder management model requires managers to pay attention to the legitimate interests of all appropriate stakeholders, implicitly and explicitly, both in the establishment of corporation structures and policies and in daily decision making. In light of the theory of property rights (Demzetz, 1967), specification of individual rights determines how costs and rewards will be allocated among the participants in any organisation. Since the specification of rights is generally affected through contracting (both implicitly and explicitly), individual behaviour in organisations depends upon the nature of these contracts. This theory suggests that shareholders' and executives' behaviour largely depends upon the nature of labour contracts, therefore binding to the legislations related to the contracts. However, the nature of the relationship between firms and society at large is responsibility-based and/or voluntarily driven. While CEOs are legally bound to the contract signed with the financial principals (the shareholders), they are in a voluntary position regarding the performance of the firm's social and

environmental responsibility which has an impact on the social principals (the stakeholders).

While there are controversial arguments about social contracts in the literature and in practice, the questions of how much voluntary responsibility a CEO should take and to what extent he/she has to fulfil voluntary responsibility to society remain unanswered. This is one of the incompatibilities of the financial principal-agent relationship (where agency costs incur) and the social principal-agent relationship (where social and environmental costs incur). It is in this grey area that executives have a chance to prioritise the fulfilment of legal contracts with shareholders rather than social contracts, by passing costs on to society (Raelin and Bondy, 2013).

Taking the view of behaviour theorists into consideration, all of the three parties – the agent, the financial principal and the social principal – have self-interests. Consequently, larger and more complicated problems might be caused by interest conflicts among the three parties. The executives' responsibility for annual reports is provided by law, whereas the legal frameworks dealing with executives' voluntary responsibility for social and environmental issues remain vague in many jurisdictions.

Jensen and Meckling (1976) argue that agency costs arise in any situation involving cooperative effort by two or more people, even though there is no clear-cut principal-agent relationship. Their argument leads to the notion that agency costs incurred in the relationship between agent (executives) and social principal can be defined as follows: (1) monitoring cost, where the social principal pays to monitor company impact on society and environment; (2) remuneration, where in return executives guarantee not to harm society and the environment; and (3) social and

environmental costs incurred from any harm to society and environment by the company.

A combination of stakeholder theory and agency theory might suggest that a CSR-favourable corporate governance structure could serve as interactive variables in a relationship between CSR and financial performance (Wood and Jones, 1995). This is likely to be an intersection of stakeholder theory and agency theory which would be a fruitful area for research on corporate governance aspects of CSR.

H1: *Sizable executive compensation in firms that engage in CSR is likely to result in increased profitability.*

Testing this hypothesis is of importance. Frye *et al*. (2006a) find that the link between CEO pay and shareholder wealth was weaker for CSR firms than for non-CSR firms. Callan and Thomas (2010) shows that CSR is among the determinants of executive pay, which indicates that pay-for-performance does not sufficiently explain compensation. However, from an agency point of view, disclosure or not of CSR information does not change executive's aim of protection of their self-interests.

Empirical studies on the relationship between executive remuneration and financial performance provide the mixed findings. Attaway's study (2000) shows that there was a weak but positive relationship between ROE and CEOs pay. Krauter and Sousa (2013) do not support the existence of a positive and significant relationship between executive compensation and corporate financial performance. Whether the generous remuneration offered to executives who use CSR disclosure as a strategic tool realistically contributes to profitability remains open. The test result for H1 would answer this question.

Impact of CSR on Profitability

Stakeholder theory (Freeman, 1984) models the groups that are affected by or can affect a company's operations, answering the question to whom a firm is responsible. Stakeholder theory questions the two critical assumptions of the neoclassical theory of the firm, profit maximisation and perfect knowledge. There is an implication of CSR in stakeholder theory which suggests that investing time and other resources in addressing stakeholders' interests is a justifiable managerial activity. Wood and Jones (1995) propose that stakeholders play three critical roles: (1) a source of expectations; (2) experiencing the effects of firm behaviours, actions and outputs; and (3) evaluation of firms' impact and/or how well firms have met their expectations. Stakeholder theory helps to explain the structures and dimensions of business-society relationships; therefore, CSR studies should be integrated with stakeholder theory (Clarkson, 1995). Following common practice in the literature, CSR refers to the behavioural decision to engage in socially responsible actions, while CSP specifically refers to measureable CSR actions.

Donaldson and Preston (1995) suggest that stakeholder theory is instrumental because it sets a framework for testing the connections of stakeholder approaches with the achievement of corporate performance goals. Later, Garriga and Mele (2004) classify the main CSR-related theories and approaches into four groups: (1) instrumental theories, in which the corporation is seen merely as an instrument for wealth creation, and its social activities are only a means to achieve economic results; (2) political theories, which concern themselves with the power of corporations in society and the responsible use of this power in the political arena; (3) integrative theories, in which the corporation is focused on the satisfaction of social demands; and (4) ethical theories, based on the ethical responsibilities of corporations to society.

Respectively, each theoretical perspective presents one of the four dimensions related to profits, political performance, social demands and ethical values.

However, one of the central problems in the evolution of stakeholder theory is the confusion of its nature and purpose (Donaldson and Preston, 1995). It views the corporation as an organisational entity through which numerous and diverse participants accomplish multiple and not always entirely congruent purposes. Consequently, it can be seen that in the CSP-financial performance literature, controversial discussions on the impact of being socially responsible on corporate outcomes are ongoing.

However, (Peloza, 2006) states an important yet underemphasized benefit of CSR, which is that it can act as insurance against negative events that would otherwise harm firms' financial performance. Margolis and Walsh (2003) emphasise the increasing pressure on companies in providing solutions to social and environmental problems, even when they have to pursue competing financial demands because social and environmental solutions are the last resort for firms' achievement of social objectives. Freeman and Velamuri (2006) propose 'company stakeholder responsibility' in order to extend the stakeholder approach to firm value creation, regardless of size and nature. Companies are supposed to undertake activities that are congruent with social values, and to communicate that their activities are congruent with such values (Buhr, 1998).

CSR disclosure is defined as the communication on the social and environmental impact resulting from organizations' economic actions on particular interest groups within society and on society at large (Gray *et al*., 1996). CSR disclosure can be strategically used to enhance corporate reputation or build brands; however, executives probably use glossy CSR

reports to build their own image at the shareholders' cost (Jensen and Meckling, 1976).

A majority of CSR disclosure studies, such as Owen (2008), Ogiri *et al.* (2012) employ legitimacy theory (Suchman, 1995b) to argue that companies seek to legitimise their existence to society by voluntarily disclosing social and environmental information within socially constructed systems of norms, values, beliefs and definitions. Legitimacy theory explicitly recognizes that companies are bound by social contracts in which they agree to perform in return for economic benefits and the guarantee of their continued (desirable and proper) existence (Guthrie and Parker, 1989).

The proposition stated in the stakeholder theory is that corporations practicing stakeholder management will, assuming other things to be equal, be relatively successful in performance targets (namely profitability, stability, growth). Stakeholder theorists propose that firms demonstrate their commitment to socially responsible behaviour in order to achieve legitimacy. Their performance efforts towards pollution mitigation, labour rights and the like will be rewarded by higher worker productivity, an enhanced corporate reputation and an expanded consumer base among the other benefits.

***H2**: CSR disclosure is likely to result in increased profitability.*

It is important to note that the CSP-financial performance relationship represents a proliferation of approaches which are controversial, complex and unclear (Garriga and Mele, 2004). Over the past four decades, the empirical findings remain ambiguous.

McGuire *et al*. (1988) conclude that there is a significant positive correlation between CSR and ROA, but no significant link between social spending and stock market prices. It is highly likely that firms with positive CSR images may find that they have more low-cost implicit claims than other firms. Therefore, investments in CSR have a big return in terms of financial results; the related benefits are found to be bigger than the related costs. Frooman (1994) lists nine event studies that correlated abnormal stock returns with the announcement of a socially irresponsible event; eight of these cases showed significant negative returns following the event announcement.

Earlier, Vance (1975) finds a negative relationship between CSP and profitability; therefore, he concludes that social performance is not a good corporate investment. It might be reasoned that high social responsibility results in enormous additional costs that put firms at an economic disadvantage compared to less socially responsible firms. With the aim of avoiding methodological problems from previous studies, Aupperle *et al*. (1985) designed a survey instrument driven by Carroll's CSR construct comprising the four components of economic, legal, ethical and philanthropic concerns. The CEOs of firms named in *Forbes 1981 Annual Directory* were asked to give scores up to 10 points to each of 20 sets of statements measuring CSR. The analysis found no significant correlation between a strong orientation to social responsibility and ROA, concluding that it was 'neither beneficial nor harmful for a firm to be socially motivated to fulfill a social contract'.

Recent studies indicate that CSR is positively related to better profitability; such as Ekatah et al. (2011) find this relationship is positive and statistically significant in a global firm in oil and gas sector - Royal Dutch Shell Plc, operating in more than 145 countries. Oeyono *et al.* (2011) reveal that there is a positive relationship between CSR and profitability in

a single developing country, Indonesia, although it is weak. Consistent with the view that CSR is a valuable resource, Flammer (2014a) finds that if a company reaches a certain level of CSR adoption, this leads to superior accounting performance (ROA and profit margin). Still, the roles of corporations in creating social values in modern society remains unclearly understood in contexts where there are considerable conflicts of interest between shareholders and stakeholders (Morck, 2014). In this setting, there is still a need for objective empirical explorations of the effect of CSP on financial performance. Therefore, testing this hypothesis using a global-level dataset is important as its result adds the empirical evidence of whether or not there is an influence of CSR on financial performance in a model that combine the factor of executive remuneration and CSR disclosure in global firms.

Impact of Executive Remuneration on CSR Disclosure and CSR Reputation

Principal-agent problems happen in any arrangements where the agent acts on behalf of the principal in transforming the principal's resources to monetary output. Seeing executives as the agent and shareholders as the principal, agency theorists (Jensen and Meckling, 1976) state that executives are under the contractual commitment of value maximisation and profit growth to their shareholders. The reward for executive effort in favour of the achievement of these commitments is compensation and managerial reputation (Fama, 1980; Fama and Jensen, 1983; Jensen and Murphy, 2004). As people tend to be opportunistic and self-interested (Smith, 1759; Smith, 1776), executives are under internal self-generated pressure to build their own wealth, while at the same time under external pressure from shareholders to maximise their shareholders' wealth.

Meanwhile, executives are under pressure from stakeholders. Viewing stakeholders as the social and environmental principal, there is an increased demand for executives to care about the needs of various

stakeholder groups (Freeman, 1984; Freeman and Velamuri, 2006). The reward for this care is goodwill from the stakeholders for the firm as well as the managers, which create, sustain and enhance corporate and individual reputational standing among other benefits.

The impact of modern economic activities on quality of life has led to a growing concern about CSR among stakeholders (Raelin and Bondy, 2013). Considering CSR integrated with business objectives, whereby there is a cross-over of the enlightened value maximization and enlightened stakeholder approaches (Fama and Jensen, 1983), socially and environmentally responsible firms are expected to have higher competitiveness (Porter and Kramer, 2006; Varenova *et al.*, 2013). The management of these firms usually invest in social and environmental projects to show their CSR commitment across the whole value chain. By realising CSR commitments through CSR disclosure, executives earn CSR reputation for their companies and for themselves (Fombrun, 2005; Bhattacharya *et al.*, 2008).

Agency theorists suggest that compensation should be a mechanism to reward executives for working towards particular outcomes set by shareholders (Jensen and Meckling, 1976). An executive compensation package essentially includes short-term pay (salary and bonus) and long-term pay (stock grants and options) in addition to other perks (Mallin, 2010). While short-term remuneration is to compensate executives for the achievement of short-term performance targets, long-term compensation is to incentivise them to fulfil long-term commitments in alignment with corporate goals. These elements are complementary to one another.

The employer evaluates the productive capacity of the employees on the basis of various combinations of *signals* and *indices* to make a self-confirmation about hiring (Spense, 1973). The assessment outcome is

transposed into the level and structure of compensation offered to the employees. The theory of market signalling (Spense, 1973) suggests there should be a combination of components in a remuneration structure in line with the alterable features of signals the candidates give the employer. One would expect that pay policy could be designed to partially mitigate agency problems. Each element of the remuneration package has different and complementary effects in encouraging executives to achieve corporate goals. The policy of offering stock to incentivise executives to maximise shareholders' value is beneficial to both management and shareholders (Raelin and Bondy, 2013).

Shareholders offer stock grants and options to executives also to motivate long-term engagements for CSR (Kane, 2002). For the agency relationship between firms and stakeholders, CSR reputation is good for both firm owner (investing their money in reputational companies) and society (firms engage with societal interests). Management is best placed to optimize stockholder returns over the longer term by embedding stakeholder perspectives (Werther and Chandler, 2005). Stock grants and options have substantial importance in the structure of executive compensation in encouraging socially responsible actions because the stock market usually has a positive response to good CSR (Luo and Bhattacharya, 2006). This in turn suggests that executive stock can be an effective tool in aligning executives' welfare with that of shareholders and stakeholders.

Following this logic, to work on the second research issue, it is hypothesised that salary and stock grant of an executive compensation package has a positive influence on CSP disclosure to the stakeholders. The above arguments lead to the following hypotheses.

H3.1: *Higher executive salary drives executives to disclose more CSP information.*
H3.2: *Higher executive stock grants drive executives to disclose more CSP information.*

In the wake of the global crisis, shareholders and stakeholders have become more demanding about CSR commitments. The agency relationship between firms and stakeholders – the environmental and social principal – has been no less important. There are plenty of independent rating agencies looking into CSR performance in order to assign scores to firms. Depending on the evaluation criteria, CSR reputation scores released by notable rating agencies (such as Fortune, Forbes or CSR Asia) have received considerable public attention. Although the methodologies used by the rating agencies, the quality of the surveys and the reliability of the results have been debatable (Chatterji *et al.*, 2009). These initiatives are a significant source of information about CSR of large companies to society since their CSR engagement in daily business activities has great value to protect societal groups. This is more important as there are loopholes in international and domestic legislations that top management can take advantage for their self-interests (Aguilera *et al.*, 2006).

Corporate reputation is defined as the accumulated impression that stakeholders have of the firm, resulting from their interactions with and communications received about the firm from a marketing perspective (Fombrun and Shanley, 1990). From an organisational behaviour perspective, personal reputation in organizations is the extent to which a person is perceived by others, over time, as performing his/her jobs competently and being helpful to others in the workplace (Zinko *et al.*, 2012). Individual reputation is the personal reputation perceived by

shareholders and stakeholders towards the fulfilment of and responsibility for the commitments to shareholders and stakeholders. The three elements of reputation include identity (what the firm is, who the individual is - the actual identity), desired identity (what the firm says it is, who the individual says he/she is), and image (what the stakeholders think the firm is, who the stakeholders think the individual is – the perceived identity) (Davies and Miles, 1998).

Managers appear to have a motivation to increase investment in CSP, possibly because a positive CSR rating can enhance their reputation; in this case the company is highly likely to incur agency costs deriving from conflicts between managers and shareholders. Executives have a chance to use investment resources for building their personal and/or corporate reputations (Hirshleifer, 1993). A company with a poor reputation needs to engage in actions that enhance its reputation. A firm with a favourable reputation may engage in actions designed to maintain or enhance its reputation. An ethical reputation of an executive, however, rests on two pillars: his/her visibility as a moral person (based upon perceived traits, behaviours, and decision-making processes) and visibility as a moral manager (Trevino et al., 2000).

On the one hand, managers are widely perceived as opportunistic. Managers engage in CSR with the purpose of generating private benefits for themselves while improving public relations and principal-agent relations (Barnea and Rubin, 2010). Empirical evidence shows that shareholders cannot always observe the manager's investment choices, which gives the manager chances to follow policies that do not maximize long-term profitability, but improve the manager's immediate reputation (Hirshleifer, 1993). High reputation gives the manager better bargaining power to increase his pay.

On the other hand, managers have good reasons to be concerned with cultivating their reputation for CSR. Even if a manager's sole purpose was to maximize shareholder value, he/she may be concerned with the firm's image perceived by stakeholders. CSR reputation building has a good side, since a major motivation for working hard is to maintain a good reputation in the way that companies deal with social and environmental issues. Beliefs about an executive's responsibility to sustainability issues will affect stock price at which firms can raise capital (Hirshleifer, 1993).

Moreover, CSR plays a role in consumers' brand and product evaluations (Klein and Dawar, 2004). CSR initiatives have a significant effect on brand attitude because consumers tend to develop positive attitudes towards responsible companies. A CSR reputation-building strategy helps managers to build firm brand, maintain sales, and gain customer goodwill (Peloza, 2006). The level of this influence varied according to a firm's CSR reputation (Lii and Lee, 2012); as a result, companies strengthen their reputations by converging on international norms of CSR (Fombrun, 2005).

Consumers are interested in the ethical behaviour of global corporations (Harrison, 2003). Social product features can affect a person's buying intentions (Auger *et al.*, 2008); however, customers often have very little tolerance for actions that go beyond what is legally and ethically acceptable by firms, and greater trust (Bhattacharya *et al.*, 1998) exists among consumers towards firms along with greater expectations for CSR engagement (Green and Peloza, 2014). Although consumers give priority to economic criteria over social criteria when making a purchasing decision (Salma *et al.*, 2012), ethical consumers are not willing to purchase from low CSR producers.

During the global economic recession, public awareness and demand for CSR was heightened. CSR has a positive impact on evaluations of the company and on purchase intentions (Mohr and Webb, 2005), and influences purchasing decisions of buyers (Castaldo, 2008). Positive CSR perceptions also enhance customer loyalty towards companies (Pomering and Dolnicar, 2009).

In a nutshell, managers have good reasons to be concerned about maintaining their good reputation in both the short and long term. Apart from the direct value of prestige, a good reputation gives the manager better bargaining power to increase his pay because it is arguable that reputation is seen as an intangible asset and thereby should be given financial worth. However, since reputations are based on perception, they are difficult to manage. Therefore, firms might increase the amount of CSP information disclosed for enhancements in their CSR reputational rating, leading to the following hypothesis.

H4: *Firms which have more CSP disclosure gain higher CSR reputation.*

In the theoretical model describing information disclosure and governance, Hermalin and Weisbach's (2012) suggest that larger firms will adopt stricter disclosure rules than smaller firms, and that mandated increases in disclosure could, in part, explain recent increases in CEO compensation. They argue that disclosure should be viewed as a *double-edged sword*. Company increase CSR disclosures for a better reputation; however, the company management can use their bargaining power to demand higher remuneration. Hermalin and Weisbach's (2012) theory proposes that owners and managers have opposing preferences regarding disclosure; consequently, managerial compensation rising with increased disclosure is a characteristic of many models of company governance. Testing the hypotheses H3.1, H3.2 and H4 is of importance

particularly in the context of the financial turmoil. The crisis awakened the public and the media to previously unknown levels of CSR and raised the warning of managerial manipulation of CSR disclosure for reputation and self-interest. This warning is justified if H3.1, H3.2 and H4 are confirmed in a dataset of multinational companies the recent financial crisis.

The danger of the executive opportunistic trait is not obvious to all until the recent financial crisis (Faulkender *et al*., 2010). Management's capacity of driving up expectations created room to make enormous profits on the volatile market. This is not fair if such low-CSR managers were enormously paid. Therefore, if the H3.1, H3.2 and H4 are confirmed from a test using the data of global companies, the compensation-setting process should be placed in the hands of shareholders, boards, and advisors who are not only independent but also possess expertise in the financial instruments used to incentivise managers.

4.3 Research Method

4.3.1 Data

This study uses the pooled cross sectional data**,** collected from Fortune and Bloomberg, of FWMA companies. From the FWMA survey conducted in each year from 2005 to 2011, the ranking results were released in the following year of the survey year. This research employs the annual data from 2005 to 2011 of the firms which appeared at least once in the FWMA ranking results released by Fortune magazine from early 2006 to early 2012. The details of the study context, master dataset and data collection process are described in Chapter 2.

The first research issue into how and why the synergy of executive compensation and CSR affects financial performance before the recent financial crisis, when the crisis was at its peak, and during the recovery years is deployed by testing H1 and H2. For the first research issue, after the firm-year observations with missing data were deleted, the final dataset to test H1 and H2 was left with 1,493 firm-year observations from 426 companies in 161 industries across 8 countries.

For the second research issue, to test H3.1, H3.2 and H4, due to the missing values for the granular elements of executive compensation, i.e. salary, bonus, stock grants, options and other compensation, the number of firm-year observations in the modeling was reduced to 499.

Remuneration is considered as the price of labour (Phillips, 1958); thus, the deflation of remuneration data to the 2005 base year allows the author to compare the effects of remuneration on CSP without the impact of inflation on the price of labour. The global economic recession is supposed to be partially reflected in the inflation rate of a country. Thus, the author ran the same regression specifications alternatively using non-deflated data and deflated data at the 2005 base year in order to compare the results with and without inflation effects. Data on yearly inflation rate was collected from IMF World Economic Outlook.

4.3.2 Regression Specifications

4.3.2.1 The First Research Issue: the Specifications for Testing H1 and H2

A linear regression model was applied to test H1 and H2, in which mean regression and quantile regression techniques were employed. To follow the previous chapter, ROE is used as the measure for the dependent variable.

$$roe_{it} = \beta_{0it} + \beta_{1it}(social\_dis) + \beta_{2it}(incentive) + \beta_{3it}(sales) + \beta_{4it}(assets) + \beta_{5it}(equity) + \beta_{6it}(yearD) + \beta_{7it}(industryD) + \beta_{8it}(countryD) + \varepsilon'_{it}$$

Equation 4.1: The Regression Specification for Testing H1 and H2

Where

roe is yearly ROE from 2005 to 2011;

social_dis is social disclosure score collected from Bloomberg;

incentive is natural logarithm of total executive compensation;

sales is natural logarithm of annual turnover;

assets is natural logarithm of annual total assets;

equity is natural logarithm of annual total equity;

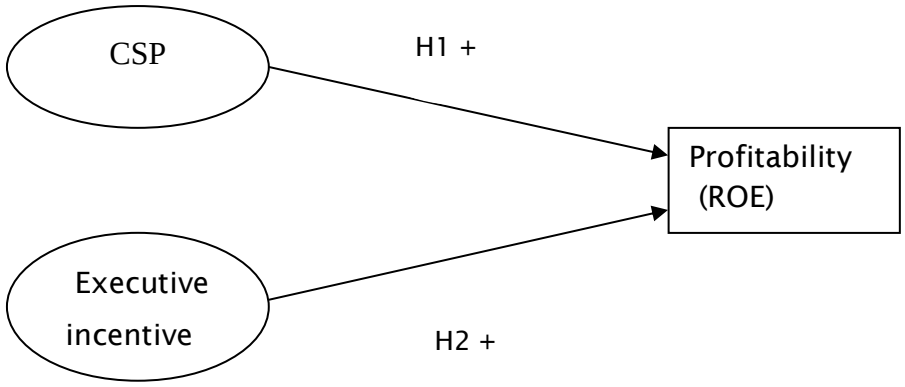
yearD is dummy variable for the years;

industryD is dummy variable for industries;

countryD is dummy variable for countries.

The full description of the variables is shown in Appendix 2. Natural logarithm was obtained for *incentive*, *sales*, *assets* and *equity* as normal distribution of the variables is one of the OLS assumptions.

Figure 4.1: Impacts of CSP and Executive Incentive on Financial Performance



First of all, for the mean regressions, the random-effects estimations were proposed to fit the data focusing on CSP disclosure and executive incentive as the key explanatory factors to predict ROE. ROE was used as the measure for financial performance following Flammer (2014a) and Makni *et al*.(2009). Panel-effects analysis has the potential to overcome a weakness of cross-sectional studies by assuming that any undocumented factors determining variables are taken into account.

After that, the quantile regressions for the 10% (Model 5), 25% (Model 6), 50% (Model 7) and 75% (Model 8) percentiles of the ROE median distribution were applied to investigate the changes in the impacts of CSP disclosure and executive incentive on ROE as ROE increased at each of the respective percentile of the ROE. Figure 4.1 below illustrates Equation 4.1.

Control Variables

In this study, the control variables are characterised by sales (*sales*), total assets (*assets*) and equity (*equity*) as this study uses ROE as the measure for profitability. Several aspects related to these dimensions may influence corporate governance of organisations in a way that tempers their boards' ability to effect change (Dalton *et al*., 1999). It is quite common in previous studies that sales (Waddock and Graves, 1997; Prior *et al*., 2008; Ammann *et al*., 2011) and/or total assets and/or equity (Frye *et al*., 2006a; Lo and Sheu, 2007a; Ammann *et al*., 2011; Ntim and Soobaroyen, 2013b) are employed to quantify firm size.

Bloomberg defines ROE was calculated as the trailed 12-month net income available for common shareholders divided by average total common equity multiplied by 100. Bloomberg uses yearly ROE from 2005 to 2011 for measuring a corporation's profitability by revealing how much profit a company generates with the money shareholders invested. Using ROE as the accounting measurement for profitability, it is obvious that

sales are positive related to profit if the other factors associated to it are controlled, hence higher ROE. Meanwhile, equity is negative related to ROE controlling other factors associated to it. Bloomberg defines total assets as the total of all short-term and long-term assets as reported on the balance sheet. As equity, a part of the long-term assets, is negative related to ROE, total assets is negatively related to ROE controlling other factors.

Natural logarithm of sales (*sales*), that of total assets (*assets*) and that of equity (*equity*) were obtained to reduce the skewness and kurtosis of the distribution of these raw data. This technique did not change the sign of the impact of these control variables on profitability in the regression outputs.

Following previous literature, industry effect (Lattemann *et al*., 2009; Menz, 2010), year effect and country effect are controlled in the regressions. However, the industry dummy variable is technically excluded in the quantile models because it is essential to retain enough degrees of freedom for the quantile regressions.

The detailed description of the variables in the proposed model and the measures are reported in Appendix 2. The coefficients of interest in Equation 4.1 are $\beta 1$ and $\beta 2$, which are both expected postive and small based on the previous literature (Harris and Bromiley, 2007; Krauter and Sousa, 2013; Wang and Sarkis, 2013). The variables of Equation 4.1 are listed in Table 4.1, which include the variable name, the variable type and the expected sign of significance and the size of the parameters of the effect of each variable on the predicted response. *yearD*, *industryD* and *countryD* are excluded from this table.

Table 4.1: Predicted Impact of the Explanatory Variables on the Dependent Variable

Variable	Type of variable	Expected sign of significance	Expected magnitude of the coefficient of the explanatory variable
roe	dependent		
social_dis	key explanatory	+	small
incentive	key explanatory	+	small
sales	control	+	large
assets	control	-	large
equity	control	-	large

4.3.2.2 The Second Research Issue: the Specifications for Testing H3.1, H3.2 and H4

Following Hair *et al*. (2010), a structural equation model, entitled Structural Equation 4.2, was proposed including two simultaneous linear equations. They key explanatory variables in Equation (1) is executive salary and stock grant. The key explanatory variable in Equation (2) is social disclosure score.

$$(1)\quad (social\_dis)_{it} = \beta_{0it} + \beta_{1it}(salary) + \beta_{2it}(stock) + \beta_{3it}(bonus) + \beta_{4it}(option) + \beta_{5it}(other) + \beta_{6it}(firm\_size) + \beta_{7it}(yearDum) + \beta_{8it}(industryDum) + \varepsilon_1$$

$$(2)\quad (csr\_reputation)_{it} = \beta_{0it} + \beta_{1it}(social\_dis) + \beta_{2it}(firm\_size) + \beta_{3it}(yearDum) + \beta_{4it}(industryDum) + \varepsilon_2$$

Structural Equation 4.2: The SEM Specification for Testing H3.1, H3.2 and H4

Where

social_dis is social disclosure score collected from Bloomberg;

csr_reputation is Fortune CSR rating, which is deliberately converted to 17 for the highest rank down to 1 for the lowest rank;

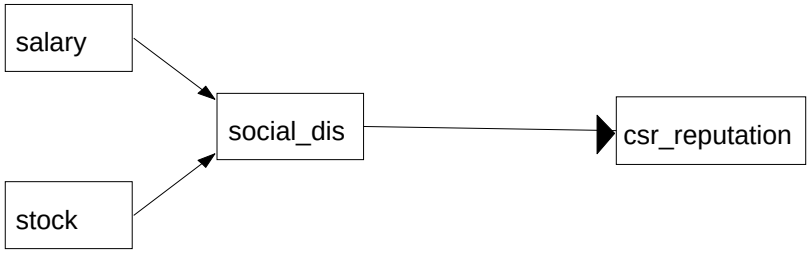
salary is natural logarithm of salary of executives;

stock is natural logarithm of stock of executives;
bonus is natural logarithm of bonus of executives;
option is natural logarithm of option of executives;
other is natural logarithm of other of executives;
firm_size is natural logarithm of turnover divided by total assets;
yearDum is the dummy variable which was assigned 0 if a year is after 2008, otherwise it is assigned 1;
industryDum is the dummy variable which was assigned 1 if a firm falls in one of the following industries: metals and mining, oil and gas, chemistry, construction, tobacco, and automobile; otherwise it is assigned 0.

The full description of the variables is shown in Appendix 2. Natural logarithm was obtained for *salary*, *stock*, *bonus*, *option, other* and *firm_size* as normal distribution of the variables is one of the OLS assumptions.

In the Structural Equation 4.2, Equation (1) describes the effects of each compensation element as the formative variables for CSP disclosure to test H3.1, H3.2; at the same time, Equation (2) describes the simultaneous effect of CSP disclosure on CSR reputation to test H4, controlling for firm size, year and industry. Figure 4.2 below illustrates the Structural Equation 4.2.

Figure 4.2: Impact of Executive Compensation on CSR



Control Variables

Executive compensation strategies include short-term pay (salary and bonus) and long-term compensation (stock grants, options and other perks) (Mallin, 2010). Each of these elements that are complementary to each other has a different impact on executive incentive. In line with these categories of an executive compensation package, in this study, executive compensation is divided into salary, cash bonus, stock grant, option and the remaining, which is called other compensation. Cash bonus (*bonus*), option (*option*) and other elements (*other*) of an executive package are the variables for control. The key explanatory variables are salary (*salary*) and stock grant (*stock*). These remuneration-related variables are predicted to have positive impact on CSP (Kane, 2002; Luo and Bhattacharya, 2006; Raelin and Bondy, 2013).

Following the literature (Lattemann *et al.*, 2009; Menz, 2010), firm size (*firm_size*), industry effect (*industryDum*) and year effect (*yearDum*) are controlled in the SEM regressions.

The size of a company is an important factor that can affect the level of CSR reporting (Sufian, 2012). Several prior studies (Cormier and Magnan, 2003; Barako *et al.*, 2006; Cho and Patten, 2007) indicate that the extent of disclosure is significantly related to company size. Several reasons have been presented in support of positive relationships between company size and social and environmental disclosure. For instance, large size companies often get greater attention and face immense pressure from different stakeholders (Alsaeed, 2006); consequently, they tend to disclose more social and environmental information than smaller firms. In addition, social and environment information disclosed is specific and costly; consequently, only large firms have the technical resources and can afford the necessary cost (da Silva Monteiro and Aibar-Guzmán, 2010).

The prevailing measurements of firm size in CSR literature come from financial point of view (such as assets, equity), marketing point of view (such as sales) and social point of view (for example number of employees). Firm size in this study is controlled by using a financial ratio that measures the efficiency of a firm's use of its assets in generating sales revenue to the firm, i.e. turnover divided by total assets. The natural logarithm of turnover divided by total assets (*firm_size*) was employed to reduce the skewness and kurtosis of the distribution of the data. The formula shows that companies with low profit margins tend to have low *firm_size*, while those with high profit margins have high *firm_size*. Previous studies (Ekatah *et al.*, 2011; Flammer, 2014a) indicates that companies with higher profit margins tend to disclose more CSR information and have better CSR reputation in the developed world. As a result, *firm_size* is predicted to be positively related to the amount of CSR information disclosed and CSR reputation.

In the Structural Equation 4.2, to retain enough degree of freedom for running regressions, year-specific effects (*yearDum*) of the two periods, before the peak of the global financial crisis (2005-2007) and at its peak and after the peak (2008-2011) were controlled. *yearDum* was assigned 1 for the years from 2005 to 2007 and equal to 0 for the year from 2008 to 2011.

Apart from that, industry effect (*industryDum*) was controlled since voluntary disclosure principles and practices might vary from industry to industry (Campbell *et al.*, 2006). The industry effect related to the industries that are commonly viewed as CSR hotspots was controlled in the model; they are metal and mining (Kemp, 2010; Hilson, 2012), oil and gas (Soares *et al.*, 2008), construction (Murray and Dainty, 2009; Barthorpe, 2010), automobile (Muller, 2006; Loureiroa *et al.*, 2012),

chemicals (Ling and Mowen, 2013) and tobacco (Palazzo and Richter, 2005).

In the Structural Equation 4.2, the coefficients of interest in Equation (1) are $\beta 1$ and $\beta 2$; the coefficients of interest in Equation (2) are $\beta 1$. All of these parameters are expected to be positive and large following (Kane, 2002; Luo and Bhattacharya, 2006). The variables of the Structural Equation 4.2 are listed in Table 4.2 and Table 4.3, which include the variable name, the variable type and the expected sign of significance and the size of the parameters of the effect of each variable on the predicted response. *yearDum* and *industryDum* are excluded from these tables.

Table 4.2: Predicted Impact of the Explanatory Variables on the Endogenous Variable in Equation (1)

Variable	Type of variable	Expected sign of significance	Expected magnitude of the coefficient of the explanatory variable
social_dis	endogenous		
salary	key explanatory	+	large
stock	key explanatory	+	large
bonus	control	+	large
option	control	+	large
other	control	+	large
firm_size	control	+	large

Table 4.3: Predicted Impact of the Explanatory Variables on the Endogenous Variable in Equation (2)

Variable	Type of variable	Expected sign of significance	Expected magnitude of the coefficient of the explanatory variable
csr_reputation	endogenous		
social_dis	key explanatory	+	large
firm_size	control	+	large

4.4 Results

4.4.1 The First Research Issue: Impact of CSR Disclosure and Executive Incentive on Financial Performance

4.4.1.1 Descriptive Statistics and Correlation Analysis

Table 4.3 reports the means, standard errors, minimum and maximum values of the variables and the bivariate correlation coefficients excluding the year, industry and country dummy.

The dependent variable *roe* has many outliers; however, even if the normality assumption of the dependent variable *roe* is violated, the efficiency of *roe* estimation increases as the sample size increases under the law of large numbers and the central limit theorem. In a large dataset, even if the dependent variable violates the normality assumption rule, its OLS estimation remains valid (Li *et al.*, 2012).

A visual inspection of the correlation coefficients would indicate concerns for multicollinearity; therefore, the author detected multicollinearity using variance inflation factors (VIF) to measures how much the variance of the coefficients is inflated by multicollinearity. VIF estimates how much the variance of a coefficient is inflated because of linear dependence with other predictors. The general rule of thumb is that VIFs exceeding 4 warrant further investigations, while VIFs exceeding 10 are signs of serious multicollinearity requiring correction (Belsley *et al.*, 1980). The test results show that the individual VIFs of each variable and the mean VIF are all well below the rule-of-thumb value of 4 in all of the models (see Appendix 7). This demonstrates that the models are identified because the assumption of no perfect multicollinearity is not seriously violated.

Table 4.4: Descriptive Statistics

	Variable	Mean	Median	S.D.	Min	Max	*roe*	*social_dis*	*incentive*	*sales*	*assets*	*equity*
Before crisis	*roe*	19.35	18.13	20.10	-78.24	133.71	1.00					
	social_dis	18.96	11.67	16.48	3.13	73.44	0.05	1.00				
	incentive	17.08	17.10	0.67	15.13	18.06	0.07	0.16**	1.00			
	sales	9.55	9.47	1.07	6.74	12.79	0.08	0.33***	0.48***	1.00		
	assets	9.96	9.83	1.35	7.28	14.60	-0.11*	0.22***	0.49***	0.74***	1.00	
	equity	8.82	8.81	1.22	3.94	11.87	-0.15**	0.27***	0.47***	0.74***	0.86***	1.00
At the peak of the crisis	*roe*	11.63	13.48	36.80	-200.77	433.12	1.00					
	social_dis	19.98	14.03	16.99	3.13	80.70	0.11*	1.00				
	incentive	16.94	16.95	0.66	15.13	18.06	0.02	0.23***	1.00			
	sales	9.45	9.42	1.12	7.21	12.96	0.01	0.31***	0.47***	1.00		
	assets	9.73	9.56	1.41	6.48	14.62	-0.09*	0.25***	0.52***	0.74***	1.00	
	equity	8.52	8.50	1.35	2.08	12.18	-0.10*	0.26***	0.52***	0.73***	0.87***	1.00
Years of recover from crisis	*roe*	19.19	15.37	25.98	-71.45	316.78	1.00					
	social_dis	22.44	19.30	17.43	3.13	83.33	0.09*	1.00				
	incentive	17.08	17.09	0.63	15.13	18.06	0.07	0.22***	1.00			
	sales	9.52	9.41	1.17	7.18	12.98	0.03	0.34***	0.40***	1.00		
	assets	9.87	9.65	1.46	6.65	14.63	-0.06	0.28***	0.46***	0.73***	1.00	
	equity	8.75	8.67	1.31	3.14	12.26	-0.22***	0.30***	0.47***	0.72***	0.88***	1.00

Notes: * p<.05 ** p<.01 *** p<.001; 1493 firm-year observations; VIFs are displayed in Appendix 7.

4.4.1.2 Regression Analysis

The author took two approaches to establish the impact of CSR disclosure and that of executive compensation on profitability: mean regression and quantile regression.

Table 4.5: Mean Linear Regression Outputs

random effect	**Model 1**	**Model 2**	**Model 3**	**Model 4**
DV: *roe*	All	Before crisis	At the peak	Recovery years
social_dis	0.16*	-0.05	0.23	0.17**
	(1.98)	(-0.69)	(1.58)	(2.67)
incentive	2.81	4.30*	3.16	6.11*
	(1.82)	(2.33)	(1.17)	(2.27)
Control				
sales	10.23***	9.19***	8.03**	10.73***
	(4.78)	(5.25)	(2.66)	(3.84)
assets	-9.01	-9.02*	-11.79	-4.73
	(-1.49)	(-2.20)	(-1.41)	(-0.94)
equity	-4.16	-1.77	0.91	-9.59**
	(-0.57)	(-0.39)	(0.08)	(-2.76)
yearD	included	included	included	included
industryD	included	included	included	included
countryD	included	included	included	included
N	1,493	397	581	515
R-sq between	0.30	0.30	0.23	0.33
R-sq overall	0.16	0.27	0.17	0.29

Notes: * p<.05 ** p<.01 *** p<.001; *z* statistics in the parenthesis of the random-effects model; the output of industry dummy variable and country dummy variable are not displayed in the table.

Result of the mean regressions. Table 4.5 displays the output of the first empirical strategy, random-effect regressions on the ROE mean distribution, controlling for the effects of sales, assets, equity, industry, year and country. The Hausman test result shows that the random effect models are preferred because the Hausman test of the null hypothesis for unsystematic statistical differences in coefficients is not rejected (P>0.05).

The panel regression results show that, for all of the observations from 2005 to 2011, social disclosure score (*social_dis*) had a significant and positive impact on *roe* (β = 0.16, P<0.5 in Model 1) while there is no significant impact of executive compensation (*incentive*) on *roe*. The year factor is significant in this model for the year 2008, i.e. the worst year of the recent financial crisis.

However, for each of the observed period- before the financial crisis, when the crisis was at its peak, and during the recovery years, there are interesting changes in these effects in terms of the significant level and magnitude. Before the crisis, only *incentive* affected *roe* significantly (β = 4.30, P<0.5 in Model 2). Neither *social_dis* nor *incentive* had a significant impact on *roe* when the crisis was at its peak; in contrast, both of these variables significantly and positively influenced *roe* during the recovery years. In this period, *social_dis* had a small influence on *roe* at 99% confidence interval (β = 0.17, P<0.1 in Model 4) while *incentive* had a large effect on *roe* at 95% confidence interval (β = 6.11, P<0.5 in Model 4).

Result of the quantile regressions. In an effort to measure the strength of the effects of *social_dis* on *roe* and that of *incentive* on *roe* within different intervals of the ROE median distribution, the author ran 10% (Model 5), 25% (Model 6), 50% (Model 7) and 75% (Model 8) percentile regressions to estimate the coefficient of the impact of each of the independent variable on *roe*. The outputs are reported in Table 4.6.

The number of observations of the 10% percentile and the 25% percentile of the ROE median distribution reduces substantially; therefore, industry effect (for 161 industries as classified by Bloomberg) is not controlled in the quantile regressions for the technical reason. It is essential to retain enough degree of freedom to run the models.

Table 4.6: Quantile Regressions

DV: *roe*	**Model 5**	**Model 6**	**Model 7**	**Model 8**
	10%	25%	50%	75%
social_dis	0.07	0.07*	0.08***	0.12***
	(1.79)	(2.38)	(3.49)	(4.22)
incentive	1.07	1.82*	3.08***	4.68***
	(0.96)	(2.29)	(4.51)	(4.92)
Control				
sales	3.40***	4.19***	4.90***	7.59***
	(3.90)	(6.36)	(9.53)	(13.08)
assets	-8.74***	-3.14***	-0.86	0.35
	(-10.19)	(-4.86)	(-1.55)	(0.50)
equity	9.05***	0.15	-5.28***	-10.40***
	(7.40)	(0.21)	(-8.78)	(-11.43)
yearD	included	included	included	included
countryD	included	included	included	included
N	1,493	1,493	1,493	1,493
Pseudo R^2	0.13	0.06	0.07	0.12

Notes: t statistics in parentheses; * p<.05 ** p<.01 *** p<.001; the outputs of yearD and countryD are not displayed in the table.

Interestingly, there is an increasing trend of the impacts of the impacts of *social_dis* and that of *incentive* on *roe* in the higher quantiles of the ROE distribution. Statistically, the impact magnitudes tend to be less significant and weaker in those firms that have lower profitability (in the 25% quantile) and insignificant in those firms who made a loss (in the 10% quantile).

Robustness checks

Endogeneity. Due to unobserved characteristics of the firms that might affect profitability and the endogenous corporate policies, endogeneity was a highly likely problem in the regression models. The author intended to apply 2SLS procedure and use the instrument variables to deal with the potential problem of endogeneity that could happen with the models.

To investigate the problem of endogeneity in the models, first, the author predicted the residuals of each of the models, then tested the association

between each residual and the key explanatory variables (*social_dis* and *incentive*) in the models. Second, the author applied correlation test for each of the residual with each of the key explanatory variables. Third, each of the residual was alternatively regressed upon each of the key explanatory variables. Fortunately, neither significant correlation coefficients nor significant regression coefficients were found, suggesting *social_dis* and *incentive* are exogenous with the error terms.

After that, the author investigated the reversal consequence of *roe* on *social_dis* and *incentive* to see whether this reversal impact is significant. The same control variables as in the models were used. Unfortunately, the regression coefficient of *social_dis* is statistically significant, suggesting that the regressors might be endogenous in our models. This endogeneity problem is dealt with using Bloomberg environmental, social and governance disclosure score (*esg_disclose*) as the instrumental variable.

In the next step, the author applied 2SLS technique in which the instrument variable *esg_disclose* was used for *social_dis*. The data for *esg_disclose* were collected from Bloomberg. This instrument variable is uncorrelated with the error term of the models but correlated with both *social_dis.* The result of the tests of endogeneity of *social_dis* instrumented by *esg_disclose* in the models indicates that the hypothesis of exogenous regressor cannot be rejected. Both P-value in Wu-Hausman F test and P-value in Durbin-Wu-Hausman chi-sq test are larger than 0.05. As a result, the assumption of exogenous regressor is not seriously violated in the models.

OLS assumptions. The author tested linearity, heteroskedasticity, multicollinearity and series correlation of Model 1, Model 2, Model 3 and Model 4. The test results demonstrated that the models did not seriously

violate these important OLS assumptions. The detail of the results is provided in Appendix 4. Besides that, the VIFs less than 4 demonstrate that the auto-correlation of the variables is not seriously violated (see Appendix 8).

Besides that, the author tested the specification of the quantile regressions. The test result demonstrates that the linearity of the quantile regression model is significant (see Appendix 4).

4.4.2 The Second Research Question: How and Why Each Granular Element of Executive Remuneration Affects CSP

4.4.2.1 Descriptive Statistics

The number of observations, mean, standard error, min and max value and correlation coefficients between the variables are reported in Table 4.7 and Table 4.8 excluding the factor variables *yearDum and industryDum*. Table 4.7 displayed the non-deflated data while deflated data at 2005 base year are shown in Table 4.8.

Two attributes can be seen in these tables. *First*, the correlation coefficient between social disclosure and CSR rating is significantly small. As a result, not much information lost in the interpretations of regression output.

Second, a visual inspection of the correlation coefficients would indicate concerns for multicollinearity; therefore, the author detected multicollinearity using variance inflation factors (VIF) to measures how much the variance of the coefficients is inflated by multicollinearity. The general rule of thumb is that VIFs exceeding 4 warrant further investigations, while VIFs exceeding 10 are signs of serious multicollinearity requiring correction (Belsley *et al.*, 1980). The test

results show that the individual VIF of each variable and the mean VIFs are all well below the rule-of-thumb value of 4 in all of the models (see Appendix 8). This demonstrates that the models are identified since the assumption of no perfect multicollinearity is not seriously violated.

Table 4.7: Non-deflated Data - Descriptive Statistics and Correlation Matrix

	Variable	Mean	S.D.	Min	Max	1	2	3	4	5	6	7
1	*social_dis*	19.25	16.31	3.13	73.44	1						
2	*csr_reputation*	12.77	3.19	3.00	17.00	.08	1					
3	*salary*	15.10	.33	14.07	15.66	.19***	.03	1				
4	*bonus*	13.78	1.66	10.82	16.64	-.02	.01	.26***	1			
5	*stock*	15.85	1.03	13.16	17.18	.17***	.05	.37***	.22***	1		
6	*option*	15.50	.99	12.71	16.79	.03	.08	.38***	.27***	.26***	1	
7	*other*	13.63	1.11	10.90	15.30	.11*	.07	.43***	.17***	.32***	.25***	1

Notes: * p<.05 ** p<.01 *** p<.00; 499 firm-year observations; VIFs are displayed in Appendix 8.

Table 4.8: Deflated Data at 2005 Base Year - Descriptive Statistics and Correlation Matrix

	Variable	Mean	S.D.	Min	Max	1	2	3	4	5	6	7
1	*social_dis*	19.25	16.31	3.13	73.44	1						
2	*csr_reputation*	12.77	3.19	3.00	17.00	.08	1					
3	*salary*	15.03	.31	14.40	15.61	.19***	.04	1				
4	*bonus*	13.66	1.72	10.06	16.57	-.02	.01	.28***	1			
5	*stock*	15.79	1.01	13.34	17.25	.17***	.05	.36***	.23***	1		
6	*option*	15.46	.94	13.52	16.94	.02	.10*	.38***	.28***	.26***	1	
7	*other*	13.62	1.13	11.55	15.80	.11*	.07	.43***	.18***	.33***	.27***	1

Notes: * p<.05 ** p<.01 *** p<.00; 499 firm-year observations; VIFs are displayed in Appendix 8.

4.4.2.2 Regression Analysis

As can be seen in Table 4.8, the structural equations comprise the regression of executive remuneration elements on social disclosure and the regression of social disclosure on CSR rating. Model 9 and Model 9a uses the non-deflated data in Table 4.7; Model 10 and Model 10a uses the deflated data at 2005 base year described in Table 4.8. Model 9a and Model 9b exclude the insignificant variables.

Table 4.9: SEM Outputs

	Model 9 Non-deflation	**Model 9a** Non-deflation	**Model 10** Deflation	**Model 10a** Deflation
Endogenous variable *social_dis*				
Exogenous variable				
salary	**7.44****	**6.42****	**7.37****	**7.12****
	(2.93)	(2.83)	(2.92)	(2.95)
stock	**2.44****	**2.30****	**2.48****	**2.34****
	(3.22)	(3.10)	(3.26)	(3.10)
Control				
bonus	-.69		-.69	
	(-1.49)		(-1.50)	
option	-.86		-.86	
	(-1.09)		(-1.08)	
other	.44		.43	
	(.61)		(.61)	
firm_size	.92	1.31^{+}	.93	1.33^{+}
	(1.22)	(1.80)	(1.23)	(1.83)
yearDum	-3.01*	-3.00*	-3.39*	-3.38*
	(-2.13)	(-2.12)	(-2.40)	(-2.39)
industryDum	6.57***	6.27***	6.53**	6.14**
	(3.13)	(2.99)	(3.11)	(2.93)
Endogenous variable *csr_reputation*				
Exogenous variable				
social_dis	**.02***	**.02***	**.02***	**0.02***
	(2.00)	(2.00)	(2.00)	(2.00)
Control				
firm_size	-.39**	-.39**	-.39**	-0.39**
	(-2.68)	(-2.68)	(-2.68)	(-2.68)
yearDum	.14	.14	.14	0.01
	(.05)	(.05)	(.05)	(0.05)
industryDum	-.20	-.20	-.20	-0.20
	(-.47)	(-.47)	(-.47)	(-0.47)
N	499	499	499	499

Notes: *z* statistics in parentheses; $^{+}$ $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$. Model 9a and Model 9b exclude the insignificant variables.

The number of observations was 499 due to missing values. However, the ratio of the number of observations to the number of variables (499/10) was well above the minimum requirements for SEM models (Joseph *et al.*, 2010).

The effect of salary on social disclosure score is significantly positive in both models (β=7.44 in Model 9, p<0.01; β=7.37 in Model 10, p<0.01). Stock's effect on social disclosure score is also significantly positive in both models (β=2.44 in Model9, p<0.01; β=2.48 in Model 10, p<0.01). The years before the crisis (2005-2007) matter less in this effect. There are no statistically significant relationships between any of the remaining elements of remuneration (*bonus, option, other*) and social disclosure.

The result shows that salary and stock, using either the current year or the 2005 constant year data, have significant positive effects on CSP measured by social disclosure score, in which one unit increase of *salary* leads to 7.44 times this increase in *social_dis* (p<0.01); i.e. if executive salary increases by a factor of approximately 2.71, there is a significant chance that social disclosure score will increase by 7.44 times with a 99% confidence interval. Simultaneously, one unit increase of *stock* leads to 2.44 times this increase in *social_dis* (p<0.01); i.e. if executive stock grant increases by a factor of approximately 2.71, there is a significant chance that social disclosure score will increase by 2.24 times with a 99% confidence interval.

Using deflated data of the same variables, one unit increase of *salary* leads to 7.37 times this increase in *social_dis* (p<0.01); i.e. if executive salary increases by approximately 2.71 times, there is a significant chance that social disclosure score will increase by 7.86 times with a 99% confidence interval, regardless of the impact of inflation on executive pay. Simultaneously, one unit increase of *stock* leads to 2.48 times this

increase in *social_dis* ($p<0.01$); i.e. if executive stock grant increases by approximately 2.71 times, there is a significant chance that social disclosure score will increase by 2.28 times with a 99% confidence interval, regardless of the impact of inflation on executive pay.

Robustness checks

Considering the first equation of the structural equations as a classical linear regression model, the OLS assumptions were tested. The models pass the assumption for linearity and the assumption for no omitted variables in the models. The regression results also hold after adjusting standard error, showing that the assumption of constant variants holds in the model. The VIFs less than 4 demonstrate that the auto-correlation of the variables is not seriously violated (see Appendix 9).

Considering the second equation of the structural equations (Model 9 and Model 10) as a classical linear regression model, the OLS assumptions were tested. The models pass three important assumptions on linearity, no omitted variables in the model, heteroskedasticity. The VIF also less than 4 demonstrate that the auto-correlation of the variables is not seriously violated (see Appendix 9).

Endogeneity

To deal with this common problem in governance literature, the instrument variables and the 2SLS method were used.

For the first equation of the structural equations, total executive compensation (*incentive)* was used as the instrument variable of the regressor (*salary)* to test if *salary* is exogenous*. incentive* is correlated to *salary* but uncorrelated to the error term of the first equation of the structure. The hypothesis of exogenous regressor cannot be rejected

(P>0.5).The test of endogeneity of *salary* indicates that *salary* is exogenous.

For the second equation of the structural equations, Bloomberg environmental, social and governance disclosure score (*esg_disclose)* was used as the instrument variable of the regressor (*social_dis)* to test if *social_dis* is exogenous*. esg_disclose* is correlated to *social_dis* but uncorrelated to the error term of the second equation of the structure. The hypothesis of exogenous regressor cannot be rejected (P>0.5).The test of endogeneity of *social_dis* indicates that *social_dis* is exogenous.

In addition, Model 9 and Model 10 pass the modification index assessment, the goodness-of-fit test and the boot strap estimation suggesting that the models are statistically accepted. The SEM model assessment results are provided in Appendix 5.

4.4.3 Result Interpretations

The interpretation of the regression results is underpinned by a strong assumption, among others, that CSP disclosure score genuinely reflects the CSR level.

At the first glace, CSR disclosure probably affected profitability while executive compensation did not have a significant impact on profitability. The years of observation cover a historic economic recession in which corporate profitability shrank to its lowest level in 2008. The year factor is significant in this model for the year 2008, i.e. the worst year of the recent financial crisis. Thus, the findings propose that, when the financial crisis was at the peak, CSR disclosure, coupled with generous executive incentive is effective solutions for unprofitable firms to recover and stay resilient. The level of significance and the magnitude of the influence of

executive compensation combining with CSP disclosure on ROE rise as the ROE increases.

Delving into these impacts, the author split the observed period into the three stages, before the recent financial crisis, when it was at its peak, and during the recovery years; the changes in these impacts can be seen in both significant level and magnitude. During the turbulence caused by the financial crisis, offering executives sizable incentives was not the solution to improve profitability. Likewise, CSR disclosure was not the direct solution for firms to overcome financial loss. As can be seen in Model 5, these findings are more likely to hold on the firms that were loss-making between 2005 and 2011, which suggests the firms should embed the other factors into their governance models.

The results suggest that CSP that combining with manager incentive, as for loss-making firms, is probably not the factor that made them financially resilient during the recent financial crisis. The findings propose that there should be a cautious approach in embedding CSR into corporate governance principles in combination with incentivising managers as this could help maintain profitability particularly for profitable firms.

Therefore, H1 and H2 are supported conditionally upon the level of profitability; i.e. these hypotheses do not work on the loss-making firms as well as on the firms in financial turmoil. For the firms that have high profitability (in the upper median of ROE distribution), the coefficients of the effects of *social_dis* and that of *incentive* on *roe* are getting larger as *roe* expands, which suggests that for these profitable firms, *social_dis* and *incentive* have more influence on profitability than for the unprofitable and less profitable firms. This evidence supports the

statement that allocating corporate resources on CSR projects might yield positive return in profitable firms.

The findings extend the statement by Aupperle *et al*. (1985) thirty years ago that CSR is neither beneficial nor harmful for a firm to fulfil a social contract by adding the condition related to the time when firms are in financial crisis or when the firms are unprofitable. For the group of successful films, if a firm has a generous executive compensation policy to incentivise responsible managers, the firm will have more chance to improve profitability from being socially responsible. These results are robust in controlling differences in inflation rate and other granular elements of an executive compensation package, which themselves could influence trends of profitability.

However, there is evidence of the significant positive influence of CSR disclosure and executive compensation on ROE in the regression results using the after-crisis data. It is also evident that this influence grew as ROE was improved. These findings suggest that both executive incentive and CSR disclosure could be inflated among the profitable firms. This gives the warning of the managerial manipulation of disclosure of CSR information.

This warning is justified by the way in which H3.1, H3.2 and H4 are simultaneously supported. Regarding the relationship between CSR disclosure and CSR rating, as can be seen in the correlation matrix, it is critical to note that *social_dis* and *csr_reputation* are minimally correlated with each other. To investigate further this association, the SEM outputs display a significant and minimal effect of the exogenous variable (*social_dis*) on the endogenous variable (*csr_reputation*). Further, there is not much difference in the corresponding coefficients from Model 9 using non-deflated data and Model 10 using deflated data. Thus, it can be

argued that the country inflation effect probably does not have a significant effect on the impact of executive salary and stock on firm social disclosure. Hence, it can be inferred that for the firms in which executive salary and stock grant have significant positive effects on the level of CSP disclosure, CSP disclosure has a positive impact on the increase in CSR reputation rating.

As a result, H4 is supported if H3.1 and H3.3 are supported. It could be inferred that if being incentivised by salary and stock grant, executives are more likely to disclose CSP; in turn, CSP disclosure helps firms to achieve a higher level of CSR reputational rank. Salary and stock might have dominated the drivers to CSR of the executives during the period from 2008 to 2011.

The result from testing these hypotheses would add to the compensation debate into two key issues. First, while public criticism focused on the size of the pay packages at failed financial institutions, it is perhaps more important to focus on the structure of compensation to prevent future crises. Too much equity exposure in an executive remuneration package can cause excessive risk-taking, manipulation, and shift executive attention away from true value creation (Faulkender *et al.*, 2010). Second, any proposals for changes in compensation structure should anticipate how executives will alter their behaviour in response to these changes.

4.5 Discussions and Conclusions of the Chapter

The study supports agency theory in terms of executive incentive mechanism in combination with disclosure of social and environmental activities leading to improvements in profitability. The study presents the empirical evidence suggesting a link between agency theory and stakeholder theory.

However, the study confirms stakeholder theory only conditionally on the combination of CSR disclosure and encouraging executive incentives. Fama and Jensen (1983) suggest that board of directors are the effective corporate governance mechanism aimed at maximizing shareholder value. In this mechanism, using independent directors aligns the interests of directors and managers with those of shareholders, and motivates the former to pursue value creation for the shareholders. Monitoring efforts of independent directors might be effective in the reduction of agency costs and hazard (or financial loss), hence resulting in increases in profitability.

If CSP is well disclosed to stakeholders in combination with incentivising responsible managers with good remuneration, firms have a chance to be profitable from being responsible. In particular, there is a trend that synergy of executive incentive and CSP disclosure appears stronger in less profitable firms. However, the study raises the concern on the agency problem, that is, the potential short-termism of executives. In some settings CSR disclosure can be positively misleading because of its overly-simplistic understanding of how and why corporate disclosure actually occurs (Owen, 2008).

On the one hand, the study outcomes may recommend that CSR firms which give good incentives, particularly salary and stock grant, to responsible executives can gain more profit indirectly from being responsible. The study finds that if they are incentivised by salary and stock grant, executives are more likely to disclose CSP information and thereby helps firms gain a higher level of CSR rating among independent rating agencies. Provided that financial incentives to responsible managers are ensured, a CSR-driven approach becomes an innovative business strategy.

Nevertheless, the empirical evidence from the recent financial crisis suggests that incentive structures should incorporate elements to guard against the possibility that performance benchmarks are rewarding luck more than sustainable, long-run performance. Therefore, the remuneration-setting process and decisions should be made by shareholders, boards, and advisors who are independent and have ample expertise in the financial instruments used to incentivise executives.

On the other hand, at a particular level of disclosure, the loss may outweigh the benefits, so increasing disclosure beyond that level would reduce firm value. Greater disclosure tends to raise executive compensation as it benefits the principal but harms the agent (Hermalin and Weisbach, 2012). Consequently, disclosure should be viewed as a *two-edged sword* because better disclosure regimes can aggravate the agency problem and related costs (Hermalin and Weisbach, 2012).

Akerlof (1970) states that wherever information is imperfect, bad products drive good products out of the market. Consequently, only low quality goods are sold in the market; even worse, the market may cease to exist. Stiglitz (1975) suggests that guarantee programmes can signal high quality products. The theory of screening (Spense, 1973) supports government intervention to reduce information asymmetry in the market. This study implies that interventions such as requirements for the independent audit on CSR information may be provided as they are useful for investors to screen good firms in times of economic uncertainty. As a result, there is an urgent need for the global standards of CSR audit to allow fair differentiations of responsible firms (*the good*) from irresponsible firms (*the bad*) in the market (Akerlof, 1970).

Theoretical contributions. This study may recommend a link between agency theory and stakeholder theory in the global context. The results

from testing the hypotheses would add to the debate on the impact of CSR to financial performance into two key issues. *First*, executive compensation has the interactive influence on the CSR-financial performance relationship in the governance model where there is a combination of CSR disclosure and executive incentive. *Second*, while public outrage has focused on the size of the pay packages at failed financial institutions, it is perhaps more important to focus on the structure of compensation. Any proposals for changes in compensation design should anticipate how executives will alter their behaviour in engaging with stakeholders in response to the changes.

Practical contributions. The evidence found in this study indicates that during the recent financial crisis, salary and stock motivated the executives to be more willing to disclose CSP information to stakeholders. However, the study raises the concern that too high salary and too much stock grant can cause excessive risk-taking, manipulation, and shift executive attention away from long-term value creation (Faulkender *et al.*, 2010). Thus, the study justifies that public had reason for blaming firms for their irresponsibility during the recent financial crisis.

This study has two main limitations worthy of further research. First, this study is based on the assumption of information symmetry when it used CSR disclosure and CSR reputation rankings as the proxies for CSR. The accuracy of information remains questionable: how to reassure investors that Bloomberg social disclosure score accurately measures CSR performance; and how to convince investors that Fortune CSR ratings are absolutely in line with the CSR of the rated firms. Besides, the level of incentive that executives receive from remuneration is assumed to be subject to the economic law of diminishing returns. It can be inferred that CSR disclosure effort may level off at a critical point due to diminishing incentive. These limitations are the areas for future study to look into.

Chapter 5: A Study of the Influence of Corporate Social Performance on Corporate Financial Performance from the Firm Nature Perspective

Underpinned by the theory of transaction costs, theory of market information and agency theory, this study tests the impact of CSP on financial performance moderated by disclosure of governance information. The study found that CSP positively affects profitability if it is intervened by governance disclosure. The study results hold for different robustness checks. The evidence indicates that corporate governance could bridge the influence of CSP on profitability. The study results suggest that the positive effect of CSP on financial performance might be attainable in the context of the firms that have well-informed good governance practices. The study confirms the theory of transaction costs.

5.1 Chapter Introduction

Applying the theory of transaction cost economics (Coase, 1937; Williamson, 1998), theory of market information asymmetry (Akerlof, 1970; Spense, 1973; Stiglitz, 1975), and agency theory, this study examines the variations in the impact of CSR on finance performance, moderated by governance, across three scenarios of the recent global financial crisis. They are before the crisis (2005-2007), at the peak of the crisis (2008-2009) and during the recovery years (2010-2011). The

research question in this study is *how and why CSR affects financial performance if it is intervened by good corporate governance*.

Using global-level data of FWMA firms, this study finds the empirical evidence of the positive effect of CSP on financial performance on the condition of intervention of transparent and good governance. In addition, the study finds the changes in the pattern of the impact partially influenced by the financial shock in the context of the global firms. The study finds that across the crisis period, firms with higher CSR had higher chance to improvement of profitability, more relative to the firms that have well-disclosed governance practices. The impact of CSR on financial performance was more sensitive to the change in the percentage of independent directors than executive compensation; this sensitivity rose during the years that financial performance recovered from the peak of the financial crisis. Furthermore, these effects were especially pronounced in the firms that have large total assets and large number of employees. The findings suggest that CSR disclosure exerts a disproportionately positive effect on profitability beyond the effect of CSR reputation on profitability. The effect continues to hold regardless the sensitivity of the sectors to social and environmental impact was controlled in the model.

To the best of the author's knowledge, this study is the first that establishes the effect of CSR on profitability on the condition of good governance disclosure from the firm nature perspective of the transaction cost theory. The study examines the changes of CSR disclosure as well as CSR reputation, and compares the variation patterns before the crisis, at the peak of the crisis and during the years that the crisis was recovered. The factor of the financial crisis was identified by exploiting the variations in the impact of CSR over time, as well as the variation across two groups of industries. The effect is significantly pronounced across the years that the firms recovered from the recent global crisis, i.e, from 2009 to 2011.

The main contribution of this study is a governance model where CSR-driven governance principles can contribute to cost control, thereby profitability improvement. Wood (2010) stated that corporate governance processes are not favored in CSP studies because they are very difficult to observe; this may be why governance has not yet claimed its place as a powerful component related to CSP. However, this study states that corporate governance is a mediator in the positive effect of CSP on financial performance; the mediating impact of governance is paramount at the peak of the crisis and played a significant role in pushing the firms out of the crisis.

This chapter starts with a literature review; underpinned by this, the hypotheses for empirical testing were developed. After that, the research method is described, and the empirical findings reported. The final section concludes the chapter giving the managerial implications and suggestions for future research.

5.2 Literature Review and Hypothesis Development

5.2.1 CSR and Governance

Economists downplay the possibility that economic actors may exhibit highly interactive behaviors and errors can stem from an exogenous shock (Colander *et al.*, 2009). Economists and regulators began to recognize their role in the failure of macro systems leading to the global financial crisis in which there is a need of CSR integrated into governance principles of companies at the micro level.

As the size and shape of the financial and economic crises became clearer, the relationship between firms and society began to shift

markedly. With the collapse of trade, manufacturing and consumer spending, the viability of firms was paramount. (Kemper and Martin, 2010). Their ability to generate dividends and yields became a prioritized indicator of the ability to repay their indebtedness.

Matten and Moon (2008) draw attention to the move toward American market-based model and away from European model in which the state is more central; they recognise that CSR is itself a phenomenon that reflects underlying changes in political and economic theory. The notion that the growth of global financial institutions could reduce overall CSR practices appears to have been revealing (Steger, 2008a). There are consequently few opportunities for individuals, financial institutions or governments to encourage improvement in CSR performance because of the enormous pressure from financial markets (Steger, 2008b).

Stakeholder theory (Freeman, 1984) suggests that firms should be accountable to stakeholders. This theory frames the idea that CSR narrows the information asymmetry gap between firms and investors. Companies are bound by a social contract in which they perform socially-desirable actions to gain approval of their objectives and other rewards, which ultimately guarantee their continued existence (Suchman, 1995a). CSR disclosure might send signals to investors and other stakeholders on which firms have high CSP and which have not. It is assumed that for all stakeholders, there is no way to tell in advance which firms are *the good* or *the bad* in terms of their CSR performance (Banerjee, 2006). *Bad* firms are not upset with this because they get a free ride (Spense, 1973; Stiglitz, 1975) from the effort and capacity of *good* firms. To differentiate from such free riders, *good* firms can prove that they deserve to be valued more because of their CSR-driven governance and hence higher performance standards.

Stakeholders are astute in this information age (Verbeke, 2005); they demand firms to be more committed to addressing environmental and social concerns. In this setting, firms become agents while external stakeholders are seen as the principals in complicated social and environmental issues. The mutual benefits from firm-society relations have become precarious in crisis years, as firms face more financial constraints while stakeholders demand greater CSR beyond the scope of any contractual arrangement.

Under Coase's (1937) theory of the nature of the firm, corporate governance issues arise conditionally on the impossibility of dealing with agency problems through contracts, and the considerable transaction costs incurred due to incomplete contracts (Hart, 1995). Transaction costs are prone to poor governance mechanisms and the coordination role of entrepreneurs. When the market is uncertain, interest conflicts are heightened; thus, governance is a cornerstone for handling agency problems that cannot be settled by contracts. Therefore, a demand-driven business model should be the one in which CSR plays a significant proactive role in favour of stakeholder engagement into corporate governance system. Within this model, firms have more chance to mitigate transaction costs because transaction costs arise in economic exchanges with external stakeholders using price mechanisms.

Previous studies find that stakeholder's orientation of corporate governance is positively associated with social and environmental disclosure (Mallin *et al.*, 2013). The close engagements between stakeholders and governance provoke increased level of voluntary disclosure (Boesso and Kumar, 2007).

H1: CSR has a positive effect on governance disclosure during the financial crisis.

Citizens demand greater accountability and responsibility from global firms and their value chain. However, little is known about the possibility that the demand for CSR from stakeholders was translated into CSR-driven governance practice during the financial crisis.

Fernández and Souto (2009) investigate the consequences of the latest economic and financial crisis on CSR. Both managers and stockholders are affected by the economic recession. The most important negative impact of CSR to companies is the potential cost for the implementation of CSR initiatives; this raises a concern on the sustainability of CSR projects.

Karaibrahimoglu (2010) investigates CSR performance for the period 2007, pre-financial crisis, and 2008, a starting point of crisis in USA market, adopting the stakeholder approach. The study randomly selected 100 companies from Fortune 500. CSP was investigated using content analysis of annual non-financial reports. In total, twenty nine indicators are investigated for estimating CSP and are classified into five stakeholders' areas for estimating CSR performance namely: employee, consumer, government, supplier and society. The presence of information for each of the indicators in CSR reports is scored with one and the absence of relative information with zero. Results show that companies decrease CSR projects during a financial downturn; the decrease of CSR projects is greater in the USA than in Europe and other countries.

Arevalo and Aravind (2010) investigate the impact of financial crisis in CSR taking into account companies that adopt the principles of United Nations Global Compact (UNGC) in governance. In total, 271 USA members of UNGC joined the study. The study concluded that in some cases CSR is considered as a starting point for improving business

operation. Companies that integrate UNGC principles with lesser conformity will be affected more by the financial downturn, while companies that adopt a proactive policy concerning UNGC are affected less.

Prior *et al.* (2008) investigates the connection between earnings management, arguing that managers who manipulate earnings can deal with stakeholder activism by resorting to CSR practices. Using data from a multi-national panel sample of 593 firms from 26 countries between 2002 and 2004, they find a positive impact of earnings management practices on CSR. Their study highlights that CSR can be used to garner support from stakeholders, thereby provides an opportunity for entrenchment to those managers that manipulate earnings. As such, they suggest an avenue of research for both the corporate governance literature, as well as for the stakeholder perspective.

To follow, this study investigates the indirect impact of CSR on governance in a recession period from 2005 to 2011 on a global-level dataset of top multinational firms. Therefore, testing this hypothesis in the context of the global firms during the financial crisis is of importance.

5.2.2 CSR-driven Governance Disclosure and Financial Performance

The invisible hand theory (Smith, 1776) fails to explain why firms are established although there is a price mechanism in the market. In a challenge to neoclassical economic tradition, transaction cost theory (Coase, 1937; Williamson, 1998) explains that firm emergence is a result of the deliberate use of corporate governance mechanisms to internalise transaction costs rather than using the market mechanism. This is because the internal costs coordinated by entrepreneurs are lower than the external costs coordinated by price mechanism. This theory can be

applied to explain the trend in which CSR is embedded into daily core business processes, a contemporary business model.

Transaction costs are conceptualised as contract-related costs, including searching, negotiating and enforcing costs, to carry out a transaction in the market mechanism (Coase, 1937; Williamson, 1998). Transaction cost theory explains the existence of enterprises in a market oriented economy, and describes why they expand activities to the external environment. For this purpose, entrepreneurs weigh the costs of exchanging resources with the external environment against the costs of using their inner resources for each of the production activities. The theory postulates that firms try to minimize the costs of exchanging resources with the market, and that they try to internalize the transaction costs incurred from using market price mechanisms in their hierarchy.

The transaction costs related to the exchange of resources with the external environment could be impacted by determinants such as frequency, specificity or core firm assets, environmental uncertainty and risks, bounded rationality, and opportunistic behaviour (Coase, 1937). Thus, it might be more economical to maintain these activities in-house because the firm can mitigate its spending on logistic arrangements, supervision and other tasks related to contracting external partners.

Williamson (1996) explains that a transaction cost is incurred when goods or a service is transferred across a 'technologically separable interface'. Transaction costs arise every time a product or service is transferred from one stage to another and/or from one person to another, and/or from one location to another where new sets of technological capabilities are needed to produce the product or service. The globalization process and the internet have dramatically changed transaction methods; as a result,

the interdependence of firms and external stakeholders (Freeman, 1984) has been on the increase, causing larger externalities.

The invisible hand theory (Smith, 1776) is conditional on an information symmetry in the market between sellers and buyers. However, this condition is unrealistic in the real market. When evaluating the goods, sellers and buyers rarely have the same product information in order to build confidence; trust is the prerequisite that drives buyers to be ready to buy. In the real market, the information that sellers have offers them an advantage over the buyers, or vice versa. This information inequality influences selling and buying choices. Consequently, it is impossible for economic transactions to be perfectly efficient in practice since one party usually has more transactional power than the other. In a challenge to neoclassical economic theorists, the theory of market information asymmetry (Akerlof, 1970; Spense, 1973; Stiglitz, 1975) proposes that market efficiency is constrained due to asymmetric information.

This theory is used to explain the importance of controlling information inequality between shareholders and managers. Corporate governance has been viewed as the cornerstone in controlling this information inequality (Hart, 1995). Akerlof (1970) conceptualises two behaviours as the specific consequence of information asymmetry, namely *adverse selection* and *moral hazard*. *Adverse selection* is made as a result of being in a market where there is a lack of information between the seller and the buyer. An example of this adverse selection can be seen in the used car market which consists almost entirely of undesirable vehicles. According to this logic, sellers of good used car are in possession of more precise valuation and are therefore not willing to sell their cars for a price at or below the average market price of used cars. Consequently, the supply does not meet the demand in this market. The invisible hand mechanism fails in the used car market because sellers and buyers do not

have as many possible choices as they would have in the case where they have precise information about the cars.

Moral hazard is the concept of unobservable dishonest behaviour, lack of transparency, irresponsibility and undue diligence of one party at the other's expense after the contract has been signed. Spense (1973) develops this concept further by looking into the labour market mechanism. Managers know better than their employees how much effort they actually put into performing their jobs. Psychologically, they take the opportunity offered by information inequality to put in less effort if they are able to choose whether to make an effort or not. There are a large number of *moral hazard* examples; these have been particularly common in the global economic downturn. For example, Fannie Mae and Freddie Mac were endowed with a guarantee offered by the US federal government, who found it impossible to observe all the business activities of these companies; as a consequence, these firms engaged in subprime lending in a risky property business.

Akerlof (1970) originally conceptualises the *costs of dishonesty* as the amount by which the purchaser is cheated and the loss incurred from driving legitimate businesses out of market. Considering the principal as the buyer and managers as the sellers in the labour market, the *costs of dishonesty* are related to *agency costs* (Jensen and Meckling, 1976).

Spense (1973) conceptualises *signal*, a latent construct within which the signalling power of observable and alterable individual characteristics can be determined. Spense (1973) gives a distinction between *indices* (observable and unalterable attributes like race, or factors that change, like age, but which are not at the discretion of the individual) and *signals* (observable features attached to the individual that are subject to manipulation by him/her). Spense's (1973) theory sets the frame of

thought of a significant number of signals that can be seen in the market. For example, executive remuneration signals the managerial capacity; social disclosure score signals CSR performance of a firm. Thus, managerial signalling was defined as any action taken by a manager that conveys information to others (Hirshleifer, 1993). The basic notion of signalling is conceptualised as taking a visible action, such as corporate disclosure, for the primary purpose of conveying information to others.

Stiglitz (1975) reverses the market efficiency assumption of traditional neoclassical economists. He states that whenever there are *externalities* (Rothschild and Stiglitz, 1976), where the action of an individual impacts the others for which they do not have to compensate, markets do not work well. The *externalities* due to the pursuit of self-interest of individuals or irresponsible firms (*the bad*) are not led by the market mechanism for efficiency.

The theories propose that *costs of dishonesty* (Akerlof, 1970) are related to *agency costs* (Jensen and Meckling, 1976), *social and environmental costs* (Coase, 1937; Ayres and Kneese, 1969; Freeman, 1984) and *transaction costs* (Coase, 1937). *Transaction costs* are the costs incurred in any economic exchange (Williamson, 1998). From the nature-of-the-firm perspective (Coase, 1937), when transaction costs in economic exchange with external stakeholders are higher than internal hierarchical costs, firms make efforts to control the costs by internalizing these external resources.

The transaction costs conceptualised by Coase (1937) are a latent construct. Although the formulas are rather sophisticated, it is impossible to cover all the transaction costs because of their unobservable nature. It remains impossible to quantify opportunity costs and market timing costs, not to mention frequency, risks and environmental uncertainty,

firm specificity and limited rationality. It is plausible to argue that firms resort to CSP as a strategy to control potential transaction costs that arise from the transactions with external stakeholders.

Institutions and markets constitute different ways of organizing and coordinating economic transactions. Under the assumption that firms pay production input costs at market price, when external transaction costs are higher than the firm's internal bureaucratic costs, the firms grow because they are able to perform more economically than when the same activities performed in the market. However, if the internal costs for coordinating production factors are higher than external transaction costs, the company will be downsized. Coase (1937) argues that firms scale up as long as their activities can be performed more cheaply within the firm than by outsourcing the activities to external suppliers in the market.

As defined in the OECD Glossary of Statistical Terms (2002), transaction costs refer to the costs involved in market exchange which include the costs of discovering market prices and the costs of writing and enforcing contracts. However, the calculation of how much actual and opportunistic money, time and effort a firm spends to search for information and ensure a contract is accurately enforced within the agreed terms and conditions is questionable. Moreover, in conditions of market uncertainty, a quality of incompleteness is part of the inherent nature of a contract; thus a point of time will arise in the execution process where at least one of the contractual parties expects to modify the contract.

Wang (2003) classifies seven approaches of measuring transaction costs comprising of monetary and financial economics, Williamsonian transaction cost economics, transaction sectors, non-marketed transaction costs, environmental and ecological economics, institutions

and economic growth, and the economics of identity. No matter how these are approached, the core principle of transaction costs seen in the definition put forward by Coase (1937) is that the more transaction costs a firm pays, the less net profit it will make.

In agency theory (Jensen and Meckling, 1976), *residual losses* of the *agency costs* arise due to the interest discrepancy between principal and agent. Today, principal-agent relationships have spread beyond the boundary of firms. If these conflicting interests are involved in social and environmental issues, the *residual loss* arises from the divergence of social and environmental interests. It is worth noting that recovery costs arisen from low CSR are usually very large due to profound social and environmental impacts on many stakeholder groups. The recovery costs may be extremely large when business activities are highly dependent on society and the environment.

The impact of modern economic activities on quality of life has led to a growing public concern about CSR (Raelin and Bondy, 2013). In the wake of the global crisis, shareholders and stakeholders have become more demanding in terms of CSR commitments. As a result, the *costs of dishonesty* are related to *social and environmental costs* (Coase, 1960; Freeman, 1984). The recovery costs can be extremely large because firms and stakeholders tend to be more interdependent and business activities tend to rely more on society and environment (Freeman and Velamuri, 2006).

CSR engagement reduces the deviation of interests between a firm and stakeholders, improves transparency and accountability, hence reducing information asymmetry. This inter-connection lays the theoretical foundation for this study to investigate the impact of disclosure of CSR-driven governance information on profitability.

In the stakeholder theory (Freeman, 1984), general shareholders are viewed as one of the internal stakeholders. The agency theory (Jensen and Meckling, 1976) views a principal as the owner whose resource is used by the others while the others are considered agents because they use the resource that they do not own at their owner's expenses. Using the agency view, if a company has no CSR, the social and environmental resources are likely to be misused by the company; both general shareholders and stakeholders would then pay costs related to this misuse. In terms of the use of financial resources, shareholders are the principal while executives are the agent; at the same time, in terms of the use of social and environmental resources, stakeholders are the principal while executives are the agent. Using social and environmental resources can result in tremendous costs to both the company and the society. This misuse causes shareholders to lose financial gain and stakeholders to lose the social and environmental benefits, in both actual and opportunity costs; then shareholders and stakeholders alike are the losers. In this case, the perspectives of stakeholders and shareholders complement each other. Therefore, this study sets the following hypothesis to be tested with the empirical data.

H2: CSR-driven governance disclosure is likely to result in creased profitability.

Testing this hypothesis is important as approaches to measure the company-specific business impacts of CSR remain missing in the current literature (Weber, 2008). At one extreme, CSR is criticised as an expensive strategy (Russo and Perrini, 2010), a burden for companies' survival in the credit crunch because of the additional financial cost related to the social initiatives. However, at the other extreme, CSR investments are essential for a firm's continued survival in an ever increasingly competitive

business world of today (Marín *et al.*, 2012); this understanding is crucial as there is an escalation of CSR concern by both society and corporations in the modern world (Samy *et al.*, 2010).

Gallego-Álvarez *et al.* (2014) show that in times of economic crisis, the synergy between environmental and financial performance is higher, meaning that companies must continue to invest in sustainable projects in order to enhance relations with their stakeholders, leading to higher economic profits. A combination of corporate governance and CSR might have a stronger positive effect on profitability than CSR alone (Ntim and Soobaroyen, 2013b) in a single country given its national context. There should be underlying mechanisms in corporate governance involving the moderated and mediated variables in CSP-financial performance relationship (Zattoni and Ees, 2012) at global level. The proposed CSP-financial performance relationship conditional on good governance needs to be further investigated; thus, the results of testing H2 in a world-wide dataset would reveal the underlying mechanism of that relationship at global level.

5.3 Research Method

5.3.1 Data

The description of the study context, the master dataset and the data collection process is detailed in Chapter 2.

This study employs the pooled cross sectional data**,** collected from Fortune and Bloomberg, of FWMA companies. From the FWMA survey conducted in each year from 2005 to 2011, the ranking results were released in the following year of the survey year. This research employs the annual data from 2005 to 2011 of the firms which appeared at least

once in the FWMA ranking results released by Fortune magazine from early 2006 to early 2012. There are a total of 3,593 firm-year observations in 621 non-duplicated companies in the master dataset covering thirty-one countries and seven years under the recent global financial crisis.

To reduce the number of outliners in the distribution of the profitability data, the lower 5% percentile and the higher 95% percentile of the values of the profitability variables were excluded from the final dataset. After deleting the observations that have the missing data for the variables of the model, there are 1,451 firm-year observations from 418 companies left in the final data set, including 30 industries in 8 countries.

The dataset was split into three subsets covering three scenarios for the empirical investigation. They are before the recent global crisis (2005-2007), at the peak of the crisis (2008 and 2009) and during the recovery years from the crisis (2010 and 2011). Employing pre-crisis data allows for an unbiased assessment (Hoorn, 2015) of the impact of CSR on financial performance.

5.3.2 The Model

This study applies the SEM technique and confirmatory factor analysis using the firm as the unit of analysis. It is expected that governance disclosure mediates the effect of CSP on financial performance in the proposed model. A structure of two simultaneous equations, Structural Equation 5.1, is proposed to describe the CSP-financial performance relationship intervened by a transparent governance regime. Structural Equation 5.1 includes Equation (1) and Equation (2). This model is to explore the indirect effect of CSP on financial performance mediated by corporate governance.

$$(1)\ gov\_dis = \beta_{0it} + \beta_{1it}(social\_dis) + \beta_{2it}(csr\_reputation) + \beta_{3it}(in\_director) + \beta_{4it}(incentive) + \beta_{5it}(assets) + \beta_{6it}(employee) + \beta_{7it}(industryDummy) + \varepsilon_{MEit}$$

$$(2)\ roa\ (roe) = \beta_{0it} + \beta_{1it}(gov\_dis) + \beta_{2it}(assets) + \beta_{3it}(employee) + \beta_{4it}(industryDummy) + \mu_{it}$$

Structural Equation 5.1: The Effect of CSP on Financial Performance Mediated by Corporate Governance

Where

roa is the yearly ROA from 2005 to 2011, 90% winsorised;

roe is the yearly ROE from 2005 to 2011, 90% winsorised;

gov_dis is the Bloomberg governance disclosure score based on 100-point measurement scale;

social_dis is the Bloomberg social disclosure score based on 100-point measurement scale;

csr_reputation is the Fortune rating on CSR reputation ranging from 1 for the lowest level of CSR reputation to 17 for the highest level of this reputation;

in_director is the percentage of independent directors in board membership;

incentive is the natural logarithm of executive compensation, 90% winsorised;

assets is the natural logarithm of annual total assets;

employee is the natural logarithm of the annual number of employees;

industryDum is the dummy variable for the metal and mining, oil and gas, construction, automobile, chemicals and tobacco industries.

The detailed description of the variables and the measures are provided in Appendix 3. Natural logarithm was obtained for *incentive*, *assets*, and *employee* as normal distribution of the variables is one of the OLS assumptions.

In the Structural Equation 5.1, the coefficients of interest in the Equation (1) are $\beta 1$ and $\beta 2$; the coefficients of interest in the Equation (2) are $\beta 1$. All of these parameters are expected to be positive and large based on the previous studies (Jamali *et al*., 2008; Arevalo and Aravind, 2010; Harjoto and Jo, 2011).

5.3.2.1 Financial Performance

In order to examine corporate financial performance, two accounting measures for profitability, ROA and ROE are used to measure profitability following Flammer (2014a), Jo *et al.* (2014) and Makni *et al*.(2009). Since transaction costs are negatively correlated with net profit, transaction costs are negatively associated to ROA as well as to ROE. ROA is a traditional indicator of profitability from an assets perspective; ROE is traditional indicator of profitability from an equity perspective. Both indicate how well a firm controls costs. Following Mahoney and Roberts (2007), ROA and ROE were separately regressed to predict a firm's financial performance. The use of assets approach to measure financial performance in Chapter 5 is complementary to the use of equity approach in Chapter 3 and Chapter 4.

5.3.2.2 Control Variables

To explore the impact of CSR on financial performance mediated by governance, this study controls for the proportion of independent directors (*in_director*), executive incentive (*incentive*) in the model. The grounds for controlling *in_director* are the previous studies such as Hung (2011), Jizi *et al.* (2013), Acharya and Pollock (2013). The other previous studies such as Frye *et al.* (2006b), Hermalin and Weisbach's (2012) ground for controlling *incentive*. Chapter 3 and Chapter 4 also strengthen the ground for controlling *in_director* and *incentive* in this study.

Several prior studies (Cormier and Magnan, 2003; Barako *et al.*, 2006; Cho and Patten, 2007) indicate that the extent of voluntary disclosure is significantly related to company size. There are the reasons in support of positive relationships between company size and voluntary disclosure. For instance, large size companies often get greater attention and face immense pressure from different stakeholders (Alsaeed, 2006); consequently, they tend to disclose more voluntary information than smaller firms.

The extent of disclosure of governance information is likely to be subject to the firm's size since several aspects of firm size may influence governance in a way that tempers the board's ability to effect change (Dalton *et al.*, 1999). Previous studies employed total assets (Lo and Sheu, 2007b; Ntim *et al.*, 2012) or number of employees (Glavas and Piderit, 2009) to quantify firm size. These studies indicate that larger companies tend to disclose more voluntary non-financial information. Besides that, the number of employees is negatively related to ROE (ROA), which is one of the accounting measures for *profitability*; likewise, total assets are negatively associated to ROA (ROE) if the other factors are controlled. In this study, firm size are characterised by total assets (*assets*) and number of employees (*employee*). Natural logarithm of total assets (*assets*) and employee number (*employee*) were obtained to reduce the effects of outliers in the distribution of those variables.

As principles and practices of voluntary disclosure might vary from industry to industry (Campbell *et al.*, 2006), the industry effect (*industryDummy*) of the industries commonly viewed as CSR hotspots is controlled in the model. They are metal and mining (Kemp, 2010; Hilson, 2012), oil and gas (Soares *et al.*, 2008), construction (Murray and Dainty, 2009; Barthorpe, 2010), automobile (Muller, 2006; Loureiroa *et al.*, 2012), chemicals (Ling and Mowen, 2013) and tobacco (Palazzo and

Richter, 2005). This strategy gives enough degree of freedom for the modelling. The full detailed description of the variables and measures are provided in Appendix 3.

The variables of the Structural Equation 5.1 are listed in Table 5.1 and Table 5.2, which include the variable name, the variable type and the expected sign of significance and the size of the parameters of the effect of each variable on the predicted response. *industryDummy* are excluded from these tables.

Table 5.1: Predicted Impact of the Exogenous Variables on the Endogenous Variable in Equation 1

Variable	Type of variable	Expected sign of significance	Expected magnitude of the coefficient of the exogenous variable
gov_dis	endogenous		
social_dis	exogenous	+	large
csr_reputation	exogenous	+	large
in_director	control	+	large
incentive	control	+	small
assets	control	+	large
employee	control	+	large

Table 5.2: Predicted Impact of the Exogenous Variables on the Endogenous Variable in Equation 2

Variable	Type of variable	Expected sign of significance	Expected magnitude of the coefficient of the exogenous variable
roa	endogenous		
roe	endogenous		
gov_dis	exogenous	+	small
assets	control	-	large
employee	control	-	large

5.4 Results

5.4.1 Descriptive Statistics and Correlation Analysis

Table 5.3 reports the number of observations, means, standard errors, minimum and maximum values and correlation coefficients between each pair of the variables.

At the first glance, there is a strong difference between the minimum value of *gov_dis* and that of *social_dis* (25 compared to 3.13) while the maximum values of these variables is nearly equal (85.71 compared to 83.33) based on the 100-point measurement scale. This indicates that a group of the firms in the dataset have considerably low social disclosure. Since there is a wide distance between the minimum value of *social_dis* and the maximum value of *social_dis*; meanwhile, the gap between the minimum value of *gov_dis* and the maximum value of *gov_dis* is much smaller, this suggests a trend that the firms attach more importance on disclosing governance information.

There are three prevailing attributes with regard to the bivariate correlation coefficients between each pair of the variables. Firstly, *social_dis* is significantly and positively correlated to *gov_dis*, suggesting a positive change in social disclosure score leads to the positive change in governance disclosure score and vice versa. Secondly, *social-dis* is minimally and positively correlated to the variables for profitability, i.e. *roa* and *roe*; however, there is no significant bivariate association between *csr-rating* and these variables for profitability. Thirdly, among the control variables, *assets* is positively and significantly correlated to *incentive*; *employee* is positively and significantly correlated to *assets.* This might suggest the trend that the larger the total assets of a firm was, the higher compensation package the firm offered to their executives. In

addition to that trend, the number of employees probably increases in the firms with large total assets.

Further, there is a large gap between the minimum value and the maximum value of the proportion of independent directors on board (*in_director)*; in contrast, there is a substantially small difference between the minimum value and the maximum value of *incentive*. This might recommend that a proportion of the firms in the dataset did not employ independent directors on board. This is opposite to another proportion of the firms having up to 100% of independent board members. No matter how many independent directors on board of the firms in the dataset, executives of these firms have sizable remuneration.

A visual inspection of the correlation coefficients between each pair of explanatory variables would indicate concerns for multicollinearity; therefore, the author detected multicollinearity using variance inflation factors (VIF) to measures how much the variance of the coefficients is inflated by multicollinearity. The general rule of thumb is that VIFs exceeding 4 warrant further investigations, while VIFs exceeding 10 are signs of serious multicollinearity requiring correction (Belsley *et al.*, 1980). The VIF calculation results show that the individual VIF as well as the mean VIFs are all well below the rule-of-thumb value of four in all of the models (see Appendix 9). This demonstrates that the models are identified because the assumption of no perfect multicollinearity is not seriously violated.

Table 5.3: Descriptive Statistics and Correlation Matrix

	Variable	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9
Endogenous														
1	*roa*	5.70	7.73	-56.13	38.73	1.00								
2	*roe*	16.61	29.56	-200.77	433.12	.67***	1.00							
3	*gov_dis*	55.36	6.18	25.00	85.71	.06*	.04	1.00						
Exogenous														
4	*social_dis*	20.65	17.05	3.13	83.33	.10***	.10***	.65***	1.00					
5	*csr_reputation*	12.60	3.13	2.00	17.00	-.00	.02	.05	.00	1.00				
Control														
6	*in_director*	82.21	11.19	0.00	100.00	.03	.09***	.23***	.19***	-.02	1.00			
7	*incentive*	17.02	0.66	15.13	18.06	.09***	.05	.21***	.21***	.03	.14***	1.00		
8	*assets*	9.84	1.40	6.48	14.63	-.12***	-.07**	.27***	.26***	.00	.10***	.48***	1.00	
9	*employee*	10.36	1.22	5.31	14.56	.06*	.02	.22***	.27***	-.06*	.14***	.30***	.49***	1.00

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; *industryDum* is not included in this table; VIFs are displayed in Appendix 9.

5.4.2 Regression Analysis

5.4.2.1 Procedure

To examine the mediating role of corporate governance in CSR-financial performance relationship, following Wu and Zumbo (2008), the procedure of the empirical investigation was divided into two main steps. The first step was to explore the direct effect of CSP data on profitability; the second one was to explore the indirect effect of CSP data on profitability mediated by governance data.

The event study was applied. There might be unobserved systematic differences across firms in the economic environment at the time of recession. These may operate at the firm level or may be specific to the years of the study period. Unlike the panel analysis and the quantile regression analysis, the event-study approach uses the observations per stage - before, during and after the event. This approach was used to investigate the change in CSR impact on profitability around the event.

The dataset was split into three sub-samples in line with the pre-crisis period, during the peak of the crisis and during the recovery years from the peak of crisis. Employing pre-crisis data allows for an unbiased assessment (Hoorn, 2015).

After these steps, as usual in governance literature, the robustness of the empirical models was analysed and the endogeneity problem of the key explanatory variables was handled using the 2SLS method. The regression results were interpreted afterwards.

5.4.2.2 Results

In the first step, for initial exploration, the linear regression models using the fixed-effect estimation were run. The same control variables as proposed in Equation (1) and Equation (2) were employed in these regressions. Fixed-effect estimation was allowed for the unobservable firm-specific factors that did not change during the study period. The time fixed effects also account for changes in the global business environments that affect all industries and countries in the dataset, such as the enactment of the US Sarbanes-Oxley Act of 2002. Therefore, the main effects of CSR disclosure and CSR reputation on profitability were identified purely from the within-firm variation over time.

Table 5.4: Initial Empirical Investigations

	Before crisis (2005-2007)		Peak of crisis (2008-2009)		Recovery years (2010-2011)	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Dependent variable	*roa*	*roe*	*roa*	*roe*	*roa*	*roe*
Independent variable						
social_dis	-0.07	-0.23	-0.10	-0.09	0.03	0.12
	(-1.26)	(-1.60)	(-1.28)	(-0.29)	(1.44)	(0.89)
csr_reputation	-0.20	-0.46	0.19	0.06	-0.19	-0.19
	(-0.95)	(-0.82)	(0.93)	(0.08)	(-2.44)	(-0.38)
Control						
in_director	-0.02	0.20	0.01	0.19	0.01	-0.02
	(-0.20)	(0.73)	(0.07)	(0.47)	(0.35)	(-0.09)
incentive	1.21	1.60	2.02	2.41	1.34*	6.91
	(1.44)	(0.71)	(1.71)	(0.51)	(2.44)	(1.93)
assets	-3.32	-25.70***	22.76***	74.20***	1.36	15.23
	(-1.33)	(-3.84)	(5.24)	(4.26)	(0.76)	(1.30)
employee	-1.73	-3.22	-14.06*	-86.04***	-1.92	-7.40
	(-0.86)	(-0.60)	(-2.54)	(-3.88)	(-1.07)	(-0.63)
industryDum	included	included	included	included	included	included
N	389	389	565	565	497	497
R^2	0.11	0.25	0.13	0.10	0.08	0.03

Note: t statistics in parentheses; * p < 0.05, ** p < 0.01, *** p < 0.001. Fixed-effect estimation method was applied. See the next table (Table 5.5) for the indirect effect of CSP data on profitability.

The regression results are reported in Models 1-6 in Table 5.4. As can be seen, there is no significant evidence of the direct effect of social disclosure (*social_dis*) on either *roa* or *roe*. Likewise, there is no significant evidence of the direct effect of CSR reputation rating (*csr_reputation*) on either *roa* or *roe*. Thus, the initial exploration of the direct effect of CSP data on profitability failed to find the significant direct impact of CSP data on profitability.

Table 5.5: Second Step- SEM Regression Results

	Before the financial crisis (2005-2007)				At the peak of the financial crisis (2008-2009)				Recovery years from the crisis (2010-2011)			
Variable	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**	**Model 17**	**Model 18**
Endogenous	*gov_dis*	*gov_dis*	*gov_dis*	*gov_dis*	*gov_dis*	*gov_dis*	*gov_dis*	*gov_dis*	*gov_dis*	*gov_dis*	*gov_dis*	*gov_dis*
Exogenous												
social_dis	0.19***	0.19***	0.19***	0.19***	0.21***	0.21***	0.21***	0.21***	0.25***	0.25***	0.25***	0.25***
csr_reputation	0.13	0.14	0.13	0.14	0.05	0.05	0.05	0.05	0.13*	0.13*	0.13*	0.13*
Control												
in_director	0.04	0.04	0.04	0.04	0.04*	0.04*	0.04*	0.04*	0.08***	0.08***	0.08***	0.08***
incentive	0.39	0.51	0.39	0.51	-0.18	-0.18	-0.18	-0.18	0.4	0.4	0.4	0.4
assets	0.17	0.15	0.17	0.15	0.60***	0.60***	0.60***	0.60***	0.53**	0.54**	0.53**	0.54**
employee	0.09	0	0.09	0	0.18	0.16	0.18	0.16	-0.42*	-0.43*	-0.42*	-0.43*
industryDum	1.13		1.13		0.26		0.26		0.24		0.24	
Endogenous	*roa*	*roa*	*roe*	*roe*	*roa*	*roa*	*roe*	*roe*	*roa*	*roa*	*roe*	*roe*
Exogenous												
gov_dis	0.1	0.11*	0.02	0.07	0.1	0.09	0.28	0.31	0.14***	0.13**	0.39*	0.37*
Control												
assets	-1.73***	-1.73***	-2.82***	-2.83***	-0.83*	-0.86**	-3.47**	-3.42**	-1.30***	-1.33***	-2.27*	-2.34*
employee	1.42***	1.32***	3.14**	2.82**	0.69	0.88*	1.46	1.21	0.74**	0.80***	1.71	1.85
industryDum	1.51		4.78		-2.34*		3.07		-1.74		-4.28	
N	389	389	389	389	565	565	565	565	497	497	497	497

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$; z-test statistics are reported upon request

In the second step, as shown in Table 5.5, the Structural Equation was run with the industry effect controlled and without the industry effect controlled alternatively. The results of the regressions with the industry effect controlled are reported in Model 7, 9, 11, 13, 15, 17. The results of the regressions without the industry effect controlled are reported in Model 8, 10, 12, 14, 16, 18.

Evidence from the regression results for Equation (1). As can be seen in Table 5.5, there is evidence that social disclosure score (*social_dis)* has significant and positive impact on governance disclosure score (*gov_dis)* in all of the firms, no matter what stage of the financial crisis is. Moreover, there is increasing trend in the magnitude of the coefficient towards the years 2010-2011 when the crisis started to recover (β=0.19, P value<.001 in Models 7-10; β=0.21, P value<.001 in Models 11-14; β=0.25, P value<.001 in Models 15-18). This impact became larger at the peak of the crisis and when the crisis started to recover.

However, the effect of *csr_reputation* on *gov_dis* is only and significantly pronounced for the years in which the financial crisis started to recover (β=0.13, P value<.001 in Models 15-18).

Regarding the control variables of Equation (1), the proportion of independent directors on board (*in_director*) has significant and positive effect on *gov_dis* in the regression results using the company data at the peak of the financial crisis and the company data during the recovery years, although the impact of *in_director* on *gov_dis* is too little to count.

However, there is no evidence of the effect of *incentive* on *gov_dis* in Table 5.5. This once again raises the issue of the importance of executive compensation in the model for corporate governance.

There is significant evidence of the impact of total assets (*assets*) on *gov_dis* when the financial crisis was at the peak and when it started to recover. The number of employees (*employee*) affects governance disclosure significantly and negatively in the results of the regressions using the data when the financial crisis started to recover.

Evidence from the regression results for Equation (2). *gov_dis* affects ROA and ROE positively and significantly during the recovery years from the financial crisis (β=0.14, P value<.001 in Model 15; β=0.13, P value<.01 in Models 16; β=0.39, P value<.05 in Model 17; β=0.37, P value<.05 in Model 18).

There is significant and negative evidence of the impact of total assets (*assets*) on ROA and ROE in all of three scenarios across the financial crisis. The number of employees (*employee*) affects profitability significantly and positively in almost of the results of the regressions. The difference in the regression coefficients of the key explanatory variables was too little to count with and without industry dummy variable in the models although this effect was significant in Model 11 when the firms were at the peak of the financial crisis.

5.4.2.3 Robustness Analysis

OLS assumption. For the classical linear regression models (Models 1-6), the OLS assumption test results show that Models 1-6 do not violate the assumptions of linearity. The regression results hold after adjusting standard error, showing that the assumption of constant variants holds in the models. In each model, the mean VIF is less than 10 demonstrates that the auto-correlation of the variables is not seriously violated.

For the SEM model, considering Equation (1) as a classical linear regression model, the OLS assumptions were tested. The model passes the assumption for linearity. The regression results also hold after adjusting standard error, showing that the assumption of constant variants holds in the model. The mean VIF is also less than 4, demonstrates that the auto-correlation of the variables is not seriously violated.

Considering Equation (2) as a classical linear regression model, the OLS assumptions were tested. The model passes the assumption for linearity. The regression results also hold after adjusting standard error, showing that the assumption of constant variants holds in the model. The mean VIF is also less than 4, demonstrates that the auto-correlation of the variables is not seriously violated.

Endogeneity. There are potential endogeneity concerns associated with endogenous firm policies beyond that induced by measurement errors of the variables and/or the endogeneity problem is brought about by omitted variable bias in the models. The instrument variables and the 2SLS method were used to address this problem.

For Equation (1), Bloomberg environmental, social and governance disclosure score (*esg_disclosure)* was used as the instrument variable of the regressor (*social_dis)* to test if *social_dis* is exogenous. *esg_disclosure* is correlated to *social_dis* but uncorrelated to the error term of the model based on Equation (1). The test result shows that the hypothesis of exogenous regressor cannot be rejected (P>0.05).The test of endogeneity of *social_dis* indicates that *social_dis* is exogenous.

The same procedure was applied to test if *csr_reputation* is exogenous using Fortune reputation rating on people management (*people*) of the

firms in the dataset. The hypothesis of exogenous regressor cannot be rejected (P>0.05); the test of endogeneity of *csr_reputation* indicates that this variable is exogenous.

For Equation (2), *esg_disclose* was used as the instrument variable of the regressor (*gov_dis)* to test if *gov_dis* is exogenous*. esg_disclose* is correlated to *gov_dis* but uncorrelated to the error term of linear model based on Equation (2). The hypothesis of exogenous regressor cannot be rejected (P>0.05).The test of endogeneity of *gov_dis* indicates that *gov_dis* is exogenous.

In addition, Models 7-18 pass the diagnostic test for SEM model including the modification index assessment, the goodness-of-fit test and the boot strap estimation. The assessment results are provided upon request.

5.4.2.4 Result Interpretations

Using the estimates, first of all, the author infers how profitability would have evolved under three alternative scenarios: (1) before the peak of the global financial crisis, i.e. from 2005 to 2007; (2) the peak throughout the crisis period from 2008 to 2009; and (3) the recovery years after the peak of the crisis, i.e, from 2010 to 2011. These projections provide the upper and lower bounds for the crisis-induced impact of CSR on profitability mediated through the governance channel. The conclusion is that the recovery years after the peak of the crisis would have been related to CSR and the contribution of independent directors in the governance model specifications in which the effect of CSR was indirectly estimated. The estimates from these scenarios indicate that the contribution of CSR and that of independent directors were significant to the increase profitability during economic recession in the firms that have good governance disclosure.

This evidence supports the arguments that (1) CSR positively affects governance; and (2) firms are likely to control a part of transaction costs by CSR-driven governance mechanisms. As already analysed during the development of the hypotheses, when transaction costs are reduced, total costs decrease and hence net income (or net profit) increases, resulting in a rise in ROA and ROE. As a result, H1and H2 are simultaneously supported in this study.

Overall, the study finds that across the crisis period, firms with higher CSR had higher governance disclosure, hence higher chance of improvement of profitability. Profitability is more relative to the firms that have well-disclosed governance practices. The impact of CSR on financial performance was more sensitive to the change in the percentage of independent directors than executive compensation; this sensitivity rose during the financial crisis. Furthermore, these effects were especially pronounced in the firms that have large total assets and large number of employees. The findings suggest that CSR disclosure exerts a disproportionately positive effect on profitability beyond the effect of CSR reputation on profitability. The effect continues to hold when the sensitivity of the sectors to social and environmental impact was controlled in the model.

The industry dummy variable (*industryDum*) is insignificant in almost of the regression results, except in Model 11 whereby *industryDum* is significant at 95% confidence interval. This is when the global financial crisis was at the peak. For Equation (1), whether *industryDum* is controlled in the model or not, there is no difference in the magnitude and significance levels of the estimates; there is only a small change seen in the magnitude and significance levels of the estimates for Equation (2).This suggests that *industryDum* might not belong to the studied relationship modelled by running Equation (1) and Equation (2)

simultaneously. This evidence can be interpreted that governance has significant mediating effect causing CSR to affect profitability across all of the sectors in the dataset. This impact was more important for the industries that are commonly viewed as CSR hotspots, metal and mining, oil and gas, construction, automobile, chemicals and tobacco when the global finance was at the peak of its crisis, i.e. 2008 and 2009.

A majority of the public believed that stricter enforcement and stronger regulations on businesses to prevent future abuses is the effective means to recover from the present economic crisis (Kemper and Martin, 2010). Strategic or instrumental CSR theories (Porter and Kramer, 2006) are challenged as gaining competitive advantage from CSR strategies might be decreasingly feasible in the period of the economic downturn. From empirical findings in this study, the main explanation for why CSR, a social construct, has an effect on financial performance could be attributed to the governance regime. In line with the previous findings that stakeholder's orientation of corporate governance is positive associated with social and environmental disclosure (Mallin *et al.*, 2013), the results of this study indicate that governance acts as the mediator of CSR-financial performance relationship. It has been shown statistically that firms can control transaction costs if they use CSP as a strategy to engage external stakeholders in their internal resources. Firms are likely to save transactions costs arising from the risk of incomplete commitments with external stakeholders, thereby higher chance of profit making.

5.5 Implications and Conclusions of the Chapter

This study finds that CSR might have resulted in better financial performance if there was a CSR-driven governance regime during the recent financial crisis. The accepted hypotheses support the existence of

the CSP-financial performance relationship conditionally on governance, which saves transactional costs to improve profitability. The result from testing this hypothesis would provide the evidence-based answer to the research question related to the impact of CSR and financial performance.

More importantly, the finding adds to a growing literature on the role of good governance in determining the impact of CSR on profitability. Using the context of the recent global financial crisis in the Fortune firms, this study confirms that CSR is the insurance-like protection (Godfrey *et al*., 2009) to the financial resilience from the financial crisis. This study gives two critical implications as followed.

First, there is more chance of profit improvement if CSR projects target the stakeholders who are at most risk of incurring transaction costs for the firms. CSP disclosure is found to have a positive effect on financial performance after accounting for the mediation of governance disclosure in FWMA firms. This study supports the theory of transaction costs.

It can be observed that the problem of asymmetric information (Akerlof, 1970) exists in the relation to a company and its shareholders and stakeholders. Thus, interest discrepancy in these relations might cause potential financial losses. This study recommends that transparent and good governance should be a useful regime in controlling transaction costs. Therefore, CSR projects implemented in conjunction with governance mechanisms is likely have a positive effect on financial performance.

The inclusion of CSR, a non-financial principle, in business models results in surplus for firms; as a result, CSR should be an *intangible asset*. This recommendation is based on the premise that: (1) it generates economic benefits in the future; (2) it is owned by companies; and (3) it is under

company control. If CSR costs are controlled, transaction costs will be reduced, thereby increasing company assets.

Second, independent directors tend to have more significant role in facilitating the effect of CSR on good governance although this is not a key explanatory variable in the regression model. This might suggest the assignment of a task of monitoring CSR activities to independent directors. There might be risks of inflation of CSR information disclosed by the management as they probably aim to placate both stakeholders and shareholders when firms are facing difficulties in recession. The boundary between a true and green-washing CSR disclosure is unclear due to information asymmetry (Akerlof, 1970). Therefore, more independent supervision on CSR disclosure by external directors is needed to maintain corporate legitimacy (Suchman, 1995b), corporate reputation, and risk reduction (Delgado-García *et al.*, 2013).

Transparency in environmental, social and governance reporting increases CSR disclosure and hence improves CSR reputation. In contrast to the sophisticated certification systems and environmental, social and governance ratings, simple publicity and communication seem to be enormously powerful. As one of the good governance practices, disclosure plays a proactive role to indicate transparent communication from companies to a variety of stakeholders.

However, on the other hand, this raises the warning on the information quality of disclosure of CSR information and governance activities. External directors should be engaged by management to verify the accuracy and correctness of CSR disclosure. Although independent board supervision over CSR disclosure incurs monitoring and bonding costs, it helps to save CSR costs for the firm, hence improvement of financial performance.

Baysinger and Hoskisson (1990) challenge the absence of detailed information in the way that independent directors may not be able to understand the business well enough to make a meaningful contribution to the improvement of financial performance. Boards with a high percentage of independent board members do not always perform better if independent directors lack information. It might only be the *tip of the iceberg*, because monitoring activities rest on the false assumptions that human behaviour is observable and that observers have the time and ability to watch this behaviour (Eisenhardt, 1989). Therefore, to reduce the risk caused by the absence of detailed information, the study recommends that independent directors should be given a new task of monitoring CSR disclosure.

Fama and Jensen (1983) assert that a higher proportion of independent directors on corporate boards would limit managerial opportunism because managers are pushed to be more accountable to shareholders, who are increasingly disconnected from management given the vertical and horizontal expansion of corporations. Impartial monitoring by independent directors suggests that executives become more responsive to shareholders, thus improving the firm's compliance with disclosure requirements. This, in turn, will enhance the comprehensiveness and quality of disclosures (Forker, 1992) following Williamson's (1985) framework which links disclosure quality with governance. In this chapter, the statement that a good governance regime is the mediator of the positive influence of CSP on financial performance adds importance to the findings reported in the two previous chapters. Together, these studies point to the need for the governance principle in which independent directors are used to monitor CSR disclosure for protection of shareholders' long-term wealth.

Theoretical contributions. This international-level study confirms the transaction cost theory and market information theory. The study proposes a well-disclosed good corporate governance mechanism acting as a bridge in CSP-financial performance relationship. This suggests the inclusion of CSR-driven governance principles in the development of a global theory of corporate governance.

Practical contributions. Firms that have a transparent governance mechanism can save transaction costs by being socially and environmentally responsible, hence profit improvement. The study suggests that CSR-driven governance principles should consider the supervision function of independent directors in CSR projects. The other suggestion is that CSR projects be linked to more chance of profit improvement if the projects target the beneficiaries who are at the most risk of incurring transaction costs for the firms.

This paper has certain limitations, which may open up significant avenues for further research. The first limitation results from the attempt to quantify human attitudes and behaviours embedded in social constructs of CSR. This rests on the assumption that managerial behaviour is observable and that observers have the time and ability to watch all human behaviours (Eisenhardt, 1989). Using either the environmental disclosure score or the social disclosure score as the proxy for CSR disclosure is a necessary condition but not a sufficient one. The second limitation is that firms which did not meet the selection criteria were not included in the dataset, which hinders possibility for the generalisation of the findings to small and medium-sized firms. Likewise, this paper does not look into the post-financial-crisis period. These limitations may be used for future research.

Chapter 6: Conclusions of the Thesis

Over the last decades, Friedman's (1970) statement "there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game" has been controversial. Was it the time for firms to assist their government in their responsibilities of caring for society, or were firms too weakened by the financial crises and the recession to provide any meaningful help to their government? If CSR should continue to expand, how to sustain the integration of CSR into a profit-making agenda remains open.

Stakeholder management perspective is not determined by time, place or economic condition (Freeman, 1984). Many firms must work with local communities, unions, regulators and financial institutions to have a hope of survival. The social and environmental responsibilities of business may be to sustain and support a high quality of human life, not to exaggerate expectations and drive equity prices higher. To do that, firms must hire managers with the ability to do more than managing financial issues. In spite of the essential differences in stakeholder viewpoint from that of Friedman and his followers, such as Jensen and Meckling (1976), how and why to ensure the stakeholder model through CSR in a balance with value maximisation in economic recession is a topic worthy for research.

In the wake of the global financial crisis, sustainable finance and CSR-driven commitments have become a fashionable goal declared by multinational companies to differentiate themselves from their competitors. However, it remains unclear about the ultimate goal of corporations in their engagement into CSR, whether it is undertaken to increase profitability or simply to respond to social pressure or both.

Academia and industry are in need of explanations and confirmations of CSP's impact on financial performance, particularly in situations of economic uncertainty when society demands firms to be more responsible. This research project has been developed and implemented towards meeting this need.

The overall objective set forward in this project is to search for the effect of CSP on financial performance in a global context, and to provide empirical evidence for this effect from the recent financial crisis. The author has investigated how and why CSP influences financial performance in three distinctive studies to achieve this overall objective. The empirical investigations used a dataset of global firms and split the data into three scenarios: before the global financial crisis (2005-2007); when the crisis was at its peak (2008-2009); and during the recovery years (2010-2011).

The following sections are the summary of each study, which includes what has been done by the author to investigate the research issues, to develop and test the hypotheses, and the summary of the results and implications.

6.1 The First Study

This study proposes a model of how and why independent directors using CSR disclosure affect profitability. The model is built on Schmidt and Keil's (2013) theory of the conditions and mechanisms that make resources valuable to a firm ex ante. Underpinned by Schmidt and Keil's (2013) work, the study specifically examines whether CSR disclosure used by independent directors has significant and positive impact on profitability during the financial crisis. The research question was addressed by testing the following hypotheses drawn from the social

network theory (Powell, 1990), resource dependence theory (Pfeffer and Salancik, 1978) and agency theory (Jensen and Meckling, 1976).

H1: The resources that gain from independent directors building their networks through CSR disclosure are likely to result in increased profitability.

H2: Independent directors pursue their self-interest by using CSR disclosure for networking, which is transformed into value added to firm profit.

The results from testing the hypotheses suggests that there is a trend that CSR disclosure is likely to cause a minimal increase in *profitability* in all of the firm-year observations if having independent directors in the model.

The empirical findings support H1 and H2, which is stronger in the condition of less profitable firms below the median of ROE distribution. This implies that there was a positive change in the impact of CSR disclosure on profitability when the event changed from the years before crisis to the years when the crisis was at its peak. This impact became significant and positive when firms were in the turmoil. However, during the recovery years, i.e. when the shock started to be over, this impact only remained significant and positive for the firms below the median of ROE.

The interpretations of the regression outputs also focus on one of the control variables, *salary.* There is no significant impact of *salary* on *profitability* found in all of the regression results obtained from this study although following Spense (1973) salary could be used to quantify managers' knowledge and experience. This might raise the need of

another the measure for managers' knowledge and experience in future studies and/or question on the importance of managers' knowledge and experience in the proposed theoretical model.

Overall, the results can be interpreted that the firms would have had more chance to improve profitability if independent directors' tasks were closely linked with CSR disclosure. Independent directors combining with the stakeholders through CSR disclosure might have been an efficient strategy in the period of the recent financial crisis. The positive effect caused by this synergy on increased ROE may recommend this synergy be one of the factors that explain how and why to increase willingness-to-pay. This confirms Schmidt and Keil's (2013) theory. The more diverse the relationships of a firm are to its customers, suppliers, and alliance partners, the better it can access information; subsequently, the closer its willingness to pay for a resource (ex ant resource value) will be transformed into the market impact of the resource (ex post resource value).

These results confirm that CSR responds to a financial crisis by adding a small margin of profit to the firm's profitability. Such confirmation supports the social network theory, resource dependence theory and agency theory. These theories are more confirmed in the subset of unprofitable firms; this emphasises the importance of the independent directors in the unprofitable firms.

There is a concern on the quality of voluntary disclosure given the problem of information asymmetry (Akerlof, 1970; Spense, 1973; Stiglitz, 1975). Thus, the results of this study point to a need for independent directors' overseeing CSR activities and the importance of audit of CSR disclosure due to independent directors who might take advantage of this type of information disclosure.

6.2 The Second Study

Applying the stakeholder theory (Freeman, 1984) and agency theory (Jensen and Meckling, 1976), this chapter investigates two research issues in the context of FWMA firms: (1) how and why a synergy of executive incentive and CSP disclosure affects financial performance, and (2) how and why executive remuneration elements influence CSP. The chapter goes on to explain why firms pay executives generously, and why firms have engaged in CSP disclosure during the financial crisis.

The study raises two research issues in relation to (1) the impact of CSR disclosure combining with executive compensation on profitability and (2) the drivers of CSR disclosure and CSR reputation. The landmark episodes of the last decade, the financial crisis and the 2008 bursting of the credit market, have drawn attention to the size and structure of executive pay and their possible role in propagating or worsening the crises.

The first research issue was addressed by testing the following hypotheses.

H1: Sizable executive compensation in firms that engage in CSR is likely to result in increased profitability.
H2: CSR disclosure is likely to result in increased profitability.

At the first glace, the results of testing H1 and H2 shows that CSR disclosure probably affected profitability while executive compensation did not have a significant impact on profitability. The years of observation cover a historic economic recession in which corporate profitability shrank to its lowest level in 2008. The year factor is significant in this model for the year 2008, i.e. the worst year of the recent financial crisis. Thus, the findings propose that, when the financial crisis was at its peak,

CSR disclosure coupled with generous executive incentive are effective solutions for unprofitable firms to recover and stay resilient.

Delving into these impacts, the author split the observed period into the three stages, before the recent financial crisis, when it was at its peak, and during the recovery years. The changes in these impacts can be seen in both significant level and magnitude. The results of testing H1 and H2 demonstrate that at the peak of the financial crisis, offering executives sizable incentives was not the solution to improve profitability; likewise, CSR disclosure was not the direct solution for firms to overcome financial loss, particularly for the loss-making firms.

The results suggest that CSP combining with manager incentive, as for loss-making firms, is probably not the factor that made them financially resilient during the recent financial crisis. The findings propose that there should be a cautious approach in incentivising managers as this might be detrimental in maintaining profitability in unprofitable firms. H1 and H2 are supported conditionally upon the level of profitability; i.e. these hypotheses do not work on the loss-making firms as well as when the financial crisis was at its peak.

For the firms that have high profitability (in the upper median of ROE distribution), the coefficients of the effects of CSR disclosure and that of executive incentive on ROE are getting larger as ROE expands, which suggests that for these profitable firms, CSR disclosure combining with executive incentive have more influence on profitability than for the unprofitable profitable firms. This evidence supports the statement that allocating corporate resources on CSR projects might yield positive returns in profitable firms.

The findings extend the statement by Aupperle *et al*. (1985) thirty years ago that CSR is neither beneficial nor harmful for a firm to fulfil a social contract by adding the condition related to the time when firms are in financial crisis or when the firms are unprofitable. For the group of unsuccessful firms, if a firm has a generous executive compensation policy to incentivise responsible managers, the firm will have less chance of improving profitability.

The second research issue was addressed by testing three following hypotheses.

H3.1: *Higher executive salary drives executives to disclose more CSP information.*
H3.2: *Higher executive stock grants drive executives to disclose more CSP information.*
H4: *Firms which have more CSP disclosure gain higher CSR reputation.*

The result from testing these hypotheses show that CSR in the period of 2005–2011 was influenced by the granular characteristics of executive compensation. The results can be inferred that executive salary and stock grants have significant positive effects on the level of CSP disclosure; at the same time, CSP disclosure has a positive impact on the increase in CSR rating. These results are robust when controlling differences in inflation rate and other granular elements of an executive compensation package. Thus, H4 is supported if H3.1 and H3.3 are supported.

Overall, the hypothesis-testing results suggest that if executives are more generously paid, they will disclose more information on CSR. Among the granular elements of an incentive package, salary and stock drive executives to disclose more CSR information; simultaneously, in these firms, CSR disclosure positively affects CSR reputational rating. This gives

the warning of the managerial manipulation of disclosure of CSR information.

The result from testing these hypotheses would add to the compensation debate into two key issues. First, while public criticism focused on the size of the pay packages at failed financial institutions, it is perhaps more important to focus on the structure of compensation to prevent future crises. Too much equity exposure in an executive remuneration package can cause excessive risk-taking, manipulation, and shift executive attention away from true value creation (Faulkender *et al.*, 2010). Second, any proposals for changes in compensation structure should anticipate how executives will alter their behaviour in response to these changes.

6.3 The Third Study

Applying the theory of transaction cost economics (Coase, 1937; Williamson, 1998), theory of market information asymmetry (Akerlof, 1970; Spense, 1973; Stiglitz, 1975), and agency theory (Jensen and Meckling, 1976), this study exploits the variations in the impact of CSR on financial performance, moderated by governance, across the three scenarios of the recent global financial crisis. They are before the crisis (2005-2007), at the peak of the crisis (2008-2009) and during the recovery years (2010-2011). This study tests the two hypotheses as followed.

H1: CSR has a positive effect on governance disclosure during the financial crisis.
H2: CSR-driven governance disclosure is likely to result in creased profitability.

The results from testing the hypotheses indicate that the indirect impact of CSR on profitability would have evolved under three alternative scenarios: (1) before the peak of the global financial crisis, i.e. from 2005 to 2007; (2) the peak throughout the crisis period from 2008 to 2009; and (3) the recovery years after the peak of the crisis, i.e. from 2010 to 2011. These projections provide the upper and lower bounds for the influence of CSR on profitability mediated through the governance channel. This inference is based on the models in which the effect of CSR was estimated when the variations in the percentage of independent directors in board membership and executive compensation in each of the scenarios were controlled. The 2008–2009 peak of the crisis would have been related to the lack of CSR-driven governance. The contribution of CSR and that of independent directors were significant to the increased profitability in the recovery years after the peak of the crisis.

There is evidence that governance has significant mediating effect that could cause CSR to have positive impact on profitability across all of the sectors in the dataset. This impact was more important for the industries that are commonly viewed as CSR hotspots, metal and mining, oil and gas, construction, automobile, chemicals and tobacco when the global finance was at the peak of the crisis, i.e. 2008 and 2009.

This evidences support the argument that firms are likely to control a part of transaction costs by CSR-driven governance mechanisms. When transaction costs are reduced, total costs decrease thereby resulting in a rise in profit. As a result, H1 and H2 are supported.

The study finds that across the crisis period, firms with higher CSR had higher chance to improvement of profitability, more relative to the firms that have well-disclosed governance practices. The impact of CSR on financial performance was more sensitive to the change in the percentage

of independent directors than executive compensation; this sensitivity rose during the financial crisis. Furthermore, these effects were especially pronounced in sectors that require intensive CSR, or in the firms that have large total assets and large number of employees. CSR disclosure might exert a disproportionately positive effect on profitability beyond the effect of CSR reputation on profitability.

From the empirical findings, the main explanation for why CSR, a social construct, has an effect on financial performance could be attributed to the governance regime. In line with the previous findings that stakeholder's orientation of corporate governance is positive associated with social and environmental disclosure (Mallin *et al.*, 2013), the results of this study indicate that governance acts as the mediator of CSR-financial performance relationship. Statistically, firms can control transaction costs if they use CSP as a strategy to engage external stakeholders in their internal resources. Therefore, it is justifiable to consider a governance model where CSR-driven governance principles can contribute to cost control.

Overall, CSR is likely to be positively related to profitability if it is intervened by governance disclosure. The evidence suggests that corporate governance should bridge the influence of CSP on profitability; positive effect of CSP on financial performance might be attainable in the context of the firms with well-informed and good governance practices.

6.4 Novel Contributions of the Thesis and Suggested Avenue for Future Research

6.4.1 Theoretical Contributions

To the best of the authors' knowledge, Chapter 3 is the first study that examines Schmidt and Keil's (2013) theory of the drivers of firm-idiosyncratic resource value using world-wide empirical data and an international perspective. Based on the result of this study, the author proposes the idea of a linkage among the social network theory, resource dependence theory and agency theory in the global context. This logic is evidenced by the empirical link between independent directors using disclosure of social information and profitability that supports Schmidt and Keil's (2013) theory. The study offers the global-level knowledge that CSR disclosure can generate financial yield if independent directors use CSR to gain the goodwill from their network. This insight might be an input for decision making on the models that promote enlightened value maximization (Jensen, 2001).

The theoretical contribution of the second study, as reported in Chapter 4, is the idea of the theoretical link between stakeholder theory and agency theory in which executive compensation combining with CSR disclosure is only positively associated to financial performance for profitable firms. This study raises the warning of managerial opportunism in using CSR for their short-term interests.

The main theoretical contribution of the third study is the idea of a governance model where CSR-driven governance principles can contribute to cost control. This contribution challenges Wood's (2010) statement that corporate governance processes are not favored in CSP studies as they are very difficult to observe; this may be why governance has not yet claimed its place as a powerful component related to CSR. However, this

study finds the empirical evidence suggesting that corporate governance is a mediator in the positive effect of CSP on financial performance.

The findings from this study support the advancement of global theories of corporate governance (Zattoni and Ees, 2012).

6.4.2 Methodological Contributions

The methodological contributions of this research project includes the use of a world-wide dataset ranging across a number of sectors and countries in each of the studies and an international perspective to increase the possibility of the generalisation of the findings in the global context. The two types of CSP proxy data, one from Fortune and the other from Bloomberg, are concurrently used to improve the reliability and validity of the empirical tests. Besides that, the structures of two simultaneous equations were used to fit the data. Moreover, endogeneity, a common problem in corporate governance research, was addressed using 2SLS method in all of the three studies.

6.4.3 Practical Contributions

The first study offers investors, managers and policy makers the insight that profit can be partially driven by firm's position in the inter-organisational network, which might be improved by the independent directors using CSR disclosure. Statistically, there was a chance that the resources of independent directors combining with their stakeholder networks built and maintained through CSR disclosure are minimally and positively associated with profitability in the FWMA firms from 2005 to 2011. This implies that independent directors affected a small proportion of profitability due to their effort of using CSR disclosure during the recent global financial crisis; therefore, the tasks of independent directors

should be involved in stakeholder approach.

The study results might imply that the synergy of independent directors combining with stakeholders enhance a firm's position in inter-organisational networks which gives the firm more accessibility to relevant information. As a result, this study reveals the underlying mechanism in which independent directors enhance shareholders' wealth by using CSR information on the purpose of winning stakeholders 'goodwill. The study justifies that the benefits of businesses and society are more interdependent in times of economic turbulence.

The second study shows the empirical evidence of a positive impact of CSP on financial performance when firms have good compensation for responsible managers. The study explains why firms offered huge compensation packages to their executives and why there has been an increase in the intensity of CSR communication since the peak of the recent financial crisis.

The study confirms agency theory in the way that executives are likely to be driven by compensation to polish and inflate the CSR information disclosed; consequently, this potentially damages the long-term interests of shareholders. The study raises the concern on managerial manipulation of CSR disclosure. There is a ground for the concern relating to the trustworthiness of CSP disclosure, given the agency problem and the problem of information asymmetry as there is usually the mixture of bad firms and good firms in the market. Thus, the study emphasises the essence of good governance mechanisms to minimize the risk of managerial manipulation in voluntary disclosure, and points to the need for suitable audit regimes on CSR disclosure. The study justifies that the public had good reason for being uncomfortable with a firm offering

excessive executive pay whilst displaying a lack of social responsibility, especially during the recent financial crisis.

The third study, to the best of the author's knowledge, is the first that establishes the effect that CSR had on profitability on the condition of transparency in governance using the global-level dataset for the empirical investigation. The study reveals the changes of annually CSR disclosure as well as CSR reputation, and compares the variation patterns before and during the peak of the crisis and during the years that the crisis was recovered. The factor of the financial crisis was identified by exploiting the variation in the impact of CSR across countries and over time, as well as the variation across industries. The effect that CSR had on profitability on the condition of transparency in governance is significant through the years of the recent global crisis.

The study finds that across the crisis period, firms with higher CSR had higher chance to improvement of profitability, if more relative to the firms that have well-disclosed governance practices. The impact of CSR on financial performance was more sensitive to the change in the percentage of independent directors than executive compensation; this sensitivity rose during the financial crisis. Furthermore, these effects were especially pronounced in the firms that have large total assets and large number of employees. The findings suggest that CSR disclosure exerts a disproportionately positive effect on profitability beyond the effect of CSR reputation on profitability; this effect holds when the sensitivity of the sectorial characteristics to social and environmental impact was controlled in the model.

Overall, the results of the three distinctive studies in this PhD research project underpin the major overall implications of the thesis are summarized as followed. The further recommendations made to policy

makers, investors, shareholders and managers have already been mentioned in Chapter 3, Chapter 4 and Chapter 5.

At the firm level, the thesis *first* implies that the strategy that independent directors who use CSP are likely to improve profit due to the willingness-to-pay for the increased resources of the firm. *Second,* the study results warn of the potential managerial manipulation of CSP disclosure due to agency problem and information asymmetry problem, thus recommending independent directors' new role of monitoring CSP disclosure. The study results are the scientific rationale behind the public concern for CSR in the firms that paid enormously to top managers during the recent financial crisis. *Third*, this thesis presents the empirical evidence that the effect of CSP on financial performance is positive provisionally on the intervention of transparent and good governance. A positive effect of CSP on financial performance is conditional on the intervention of transparent and good governance. The thesis suggests that firms with CSR-oriented governance principles have more chance to be financially resilient during the financial crisis.

Fourth, the thesis implies that CSR is an intangible asset of firms; CSP-driven governance principles are among the solutions for maintaining financial resilience in a time of recession. The insight of the interacting and intervening conditions for the positive effect of CSP on financial performance is useful for companies to make responsible resource allocations and design business strategy. From the understanding of these conditions, it is plausible to classify CSR as an intangible asset on company balance sheets, where the accounting of CSR costs may be based on the principle of reasonable estimate.

At the macro level, the thesis unpacks the advantages of the two organisational types of economic activities based on networks and on

corporate governance hierarchies during the recent financial crisis. This should be a policy consideration when the market mechanism fails in the period of economic downturn.

6.4.4 Avenues for Future Research

This thesis has the certain limitations which open up significant avenues for further research, as mentioned in Chapter 3, Chapter 4 and Chapter 5. The following is a summary of the potential research topics.

First, the use of social disclosure scores and CSR reputation ratings as proxies for CSR is a necessary but not sufficient condition. Other components of CSR, such as customer relationships, employee motivation, health and safety issues among other various elements of the four CSR pillars (Hancock, 2005), are not included in the quantification of CSP in this research. This weakness means a fertile area for further research. Furthermore, this research project does not deal with the environmental aspect of CSR, e.g. environmental disclosure score. This becomes the direction for future research to investigate the study subject using environmental disclosure score as the other proxy for CSP.

Second, the firms which do not meet the turnover selection criteria of FWMA survey are not included in the dataset. This limitation hinders the possibilities of generalising the findings in the settings of small and medium firms. Future research into the same issues in small and medium enterprises is expected to fill this contextual research gap.

Third, this study challenges the assumptions of information symmetry. Two questions remain unanswered: (1) whether Bloomberg social disclosure score precisely measures CSP; (2) whether Fortune CSR rating

is absolutely in line with the actual CSR of the rated firms. These critical questions should be investigated in future research.

Fourth, executive incentive is assumed to be subject to the economic law of diminishing returns. It may be proposed that CSR disclosure possibly levels off or starts to go down at a critical level of executive compensation. Moreover, better disclosure regimes can aggravate related costs including executive compensation; consequently, a point can exist beyond which additional disclosure decreases firm value (Hermalin and Weisbach, 2012). Future study should look into this diminishing trend.

Last but not least, there is a large research gap in the possible equilibrium of CSR costs and benefits. Based on the outcomes of Chapter 5, it can be inferred that there may be a point of equilibrium of CSR costs and benefits. If so, when the equilibrium breaks down, it either results in a surplus (where transaction cost savings are higher than CSR costs) or a deficit (where transaction cost savings are lower than CSR costs). This assumption is worthy for future investigations.

Appendix 1: Description of the Variables for Chapter 3

Variable	Description	Unit
profitability	Yearly ROE from 2005 to 2011, measuring a corporation's profitability by revealing how much profit a company generates with the money shareholders invested. ROE was calculated as follows: (Trailed 12 month net income available for common shareholders / average total common equity) * 100.	Ratio
social_dis	PROPRIETARY Bloomberg scored social disclosure, which is based on the extent of company social disclosure as a part of Environmental, social and governance (ESG) data. Companies that are not covered by the ESG group and companies that do not disclose anything will have no score. The score ranges from 0.1 for companies that disclosed a minimum amount of social data to 100 for those that disclosed every data point collected by Bloomberg. Each data point is weighted in terms of importance, with workforce data carrying a greater weight than other disclosures. The score is also tailored to different industries. In this way, each company is only evaluated in terms of the data that is relevant to its industry sector.	Number
in_director	The percentage of independent members on board	%
Control variables		
salary	Natural logarithm of executive salary in million USD	Number

employee	Natural logarithm of the number of employees in a company	Number
assets	Natural logarithm of total assets. Bloomberg defined total assets as the total of all short and long term assets as reported on the balance sheet, in billion USD.	Number
gearing	Debt-to-equity ratio	Ratio
qua_reputation	Fortune rank of corporate reputation for product and service quality	Integer from 1 (lowest) to 17 (highest)
sales	The natural logarithm of turnover in billion USD.	Number
salesgrow	Growth rate of turnover	Ratio
yearD	Dummy variable for the years	Dummy
industryD	Dummy variable for the industries	Dummy
countryD	Dummy variable for the countries	Dummy

Appendix 2: Description of the Variables for Chapter 4

Variable	Description	Unit
roe	Yearly ROE from 2005 to 2011	Ratio
social_dis	Bloomberg social disclosure score	Number
incentive	Natural logarithm of total executive compensation in million USD	Number
csr_reputation	Fortune CSR rating; Fortune rated the social responsibility performance of the World's Most Admired Companies and published the rating scores annually early in the year after the surveyed year. The scores range from 1 down to 17. The top score, 1, is assigned for the company which has the best social performance as assessed by a large team of experts involved in the survey. The author reversed the highest score to 17, for the company which has the best social performance down to 1 for the company at the bottom of the Fortune ratings.	Integer from 1 (lowest) to 17 (highest)
salary	Natural logarithm of executive salary in million USD	Number
stock	Natural logarithm of executive stock grant in million USD	Number
Control variables		
sales	The natural logarithm of turnover in billion USD	Number
assets	Natural logarithm of total assets. Bloomberg defined total assets as the total of all short and long term assets as	Number

	reported on the balance sheet, in billion USD.	
equity	Natural logarithm of total equity in billion US dollars	Number
bonus	Natural logarithm of executive cash bonus in million USD	Number
option	Natural logarithm of executive option in million USD	Number
other	Natural logarithm of other executive compensation in million USD	Number
firm_size	Natural logarithm of (turnover divided by total assets)	Number
yearD	Dummy variables for the years	Dummy
industryD	Dummy variables for the industries	Dummy
countryD	Dummy variables for the countries	Dummy
yearDum	Dummy variable, assigned 0 if a year is after 2008, otherwise it is assigned 1.	Dummy
industryDum	Dummy variable, assigned 1 if a firm falls in one of the following industries: metals and mining, oil and gas, chemistry, construction, tobacco, and automobile; otherwise it is assigned 0.	Dummy

Appendix 3: Description of Variables for Chapter 5

Variable	Description	Unit
roe	Yearly ROE from 2005 to 2011, 90% winsorised	Ratio
roa	Yearly ROA from 2005 to 2011, 90% winsorised ROA gives an idea as to how efficient management is at using its assets to generate earnings. It is calculated as: (Trailing 12 months net income / average total assets) * 100	Ratio
social_dis	Bloomberg social disclosure score	Number
gov_dis	PROPRIETARY Bloomberg corporate governance disclosure score based on the extent of a company's corporate governance disclosure as a part of ESG data. Companies that are not covered by the ESG group, or which do not disclose anything, will have no score. The score ranges from 0.1 for companies with a minimum amount of corporate governance data to 100 for those that disclose every data point collected by Bloomberg. Each data point is weighted in terms of importance, with board of director data carrying more weight than other disclosures. The score is also tailored to different industry sectors. In this way, each company is only evaluated in terms of the data that is relevant to its industry sector.	Number
csr_reputation	Fortune reputational rating for CSR	Integer from 1 (lowest) to 17 (highest)

Control variable		
in_director	The percentage of independent directors in the board membership	%
incentive	Natural logarithm of total executive compensation in million USD	Number
assets	Natural logarithm of total assets in billion USD	Number
employee	Natural logarithm of the number of employees	Number
industryDum	Dummy variable, assigned 1 if a firm falls in one of the following industries: metals and mining, oil and gas, chemistry, construction, tobacco, and automobile; otherwise it is assigned 0.	Dummy

Appendix 4: Diagnostic Test Results for Models 1-4 in Chapter 4

Diagnostic test	Result	Interpretation
Mean regressions:		
Linearity	P=0.00	The non-linear relationship hypotheses are rejected.
Heteroskedasticity	The robust check results hold in all of the models	The assumption of constant variance is not violated.
Multicollinearity	VIFs < 10	The influence of the variables is not significantly strong.
Series correlations (Woodridge test)	P>0.05	The assumption of series observations is not violated (no first-order autocorrelation in panel data).
Median regressions: Models 5-8		
Specification test	_hat <0.05 while _hatsq >0.05	The linearity of the median regression specification is significant.

Appendix 5: SEM Assessment Results for Chapter 4

1. Assessment of Model 9

- No modification indices to be reported, all modification index values less than 3.84; therefore, it is not necessary to modify the proposed theoretical models (Hair *et al*., 1998).
- Applying the Ward test of linear hypotheses to the whole model, Ho 'coefficents = 0' is significantly rejected at 99.99% in all models. Likewise, using the equation-level Ward test of linearity, Ho 'coefficents = 0' is significantly rejected at 99.99%.
- The findings hold in the bootstrap estimation of Model 1.

Assessment of Model 10

- No modification indices to be reported, all modification index values less than 3.84; therefore, it is not necessary to modify the proposed theoretical models (Hair *et al*., 1998).
- Applying the Ward test of linear hypotheses to the whole model, Ho 'coefficents = 0' is significantly rejected at 99.99% in all models. Likewise, using the equation-level Ward test of linearity, Ho 'coefficents = 0' is significantly rejected at 99.99%.
- The findings hold in the bootstrap estimation of Model 2.

2. Goodness-of-fit test results of Model 9 and Model 10

The models pass the goodness-of-fit test.

Goodness-of-fit test result

Fit statistic	Value Model 7	Value Model 8	
Likelihood ratio			
chi2_ms(5)	4.18	4.2	
p>chi2	0.52	0.53	non-significant
chi2_bs(17)	60.36	60.37	
p>chi2	0.00	0.00	
df > 0 (overspecified)			
Chi2/df			< 3:1 or <5 if N>200
Population error			
RMSEA	0.00	0.00	<0.07 with CFI > .97
90% CI, lower bound	0.00	0.00	< 0.05
upper bound	0.06	0.06	< 0.1
pclose	0.91	0.92	
Information criteria			
AIC	15384.66	15381.24	
BIC	15452.06	15448.64	
Baseline comparison			
CFI	1.00	1.00	Approach 1
TLI	1.07	1.07	Approach 1
Size of residuals			
SRMR	0.01	0.01	< 0.08 but bias, not use
CD	0.10	0.10	Like R^2

3. Bootstrap estimations

The variable mean parameters of the bootstrap estimations fit the estimated parameters of two models.

		Observed coefficient (SEM model)	Observed coefficient (Bootstrap)	Bootstrap standard error (50 replications)
Model 9	*social_dis*			
	ln_salary	7.44** (2.93)	7.44*** (3.30)	2.25
	ln_bonus	-.69 (-1.49)	-.69 (-1.53)	.45
	ln_stock	2.44** (3.22)	2.44*** (3.40)	.72
	ln_option	-.86 (-1.09)	-.86 (-1.13)	.76
	ln_other	.44 (.61)	.44 (0.67)	.66
	size	.92	.92	.70

		(1.22)	(1.30)	
	yearDum	-3.01*	-3.01	1.58
		(-2.13)	(-1.90)	
	industryDum	6.57***	6.57**	2.40
		(3.13)	(2.73)	
	csr_reputation			
	social_dis	.02*	.02	.01
		(2.00)	(1.79)	
	size	-.39**	-.39***	0.12
		(-2.68)	(-3.34)	
	yearDum	.14	.01	.31
		(.05)	(.04)	
	industryDum	-.20	-.20	.38
		(-.47)	(-.52)	
Model 10	*social_dis*			
	ln_de_salary	7.37**	7.34***	2.24
		(2.92)	(3.29)	
	ln_de_bonus	-.69	-.69	.51
		(-1.50)	(-1.37)	
	ln_de_stock	2.48**	2.48***	.72
		(3.26)	(3.47)	
	ln_de_option	-.86	-.86	.81
		(-1.08)	(-1.07)	
	ln_de_other	.43	.43	.92
		(.61)	(0.47)	
	de_size	.93	.93	.87
		(1.23)	(1.07)	
	yearDum	-3.39*	-3.39**	1.38
		(-2.40)	(-2.45)	
	industryDum	6.53**	6.53**	2.13
		(3.11)	(3.07)	
	csr_reputation			
	social_dis	.02*	.02*	.01
		(2.00)	(2.14)	
	size	-.39**	-.39**	.17
		(-2.68)	(-2.34)	
	yearDum	.14	.01	.31
		(.05)	(0.04)	
	industryDum	-.20	-.19	.45
		(-.47)	(-0.44)	

Notes: *z* statistics in parentheses; * $p < .05$, ** $p < .01$, *** $p < .001$.

Appendix 6: Variance Inflation Factors – Chapter 3

Variable	All 1,817 observation	lower 25%	lower 50%	higher 50%	higher 25%
social_dis	1.21	1.38	1.22	1.22	1.34
in_director	1.04	1.11	1.1	1.03	1.12
salary	1.08	1.14	1.15	1.07	1.14
employee	2.07	2.67	2.42	1.98	1.95
assets	2.45	2.92	2.71	3.64	4.6
gearing	1.04	1.45	1.31	1.08	1.1
quality	1.03	1.12	1.05	1.04	1.05
sales	3.76	4.37	3.77	5.07	5.65
salesgrow	1.05	1.19	1.1	1.04	1.08
L.roe	1.06	1.27	1.13	1.11	1.14
Mean VIF	1.58	1.86	1.69	1.83	2.02

	Before crisis		Peak		Recovery years	
Variable	lower 50%	higher 50%	lower 50%	higher 50%	lower 50%	higher 50%
social_dis	1.11	1.33	1.32	1.27	1.35	1.32
in_director	1.04	1.12	1.15	1.05	1.19	1.1
salary	1.14	1.13	1.2	1.08	1.18	1.17
employee	2.46	2.01	2.04	2.22	2.63	2.06
assets	2.41	4.03	2.44	3.31	3.07	3.91
gearing	1	1.42	1.09	1.06	1.39	1.05
quality	1.06	1.04	1.09	1.07	1.09	1.05
sales	4.1	4.7	3.43	5	4.48	5.29
salesgrow	1.04	1.11	1.06	1.04	1.04	1.1
Mean VIF	1.71	1.99	1.65	1.9	1.93	2.01

Appendix 7: Variance Inflation Factors – Chapter 4 – 1st Research Issue

Variable	All 1,493 observations	Before crisis	Peak of crisis	Recovery years	10% percentile	25% percentile	50% percentile	75% percentile
social_dis	1.13	1.13	1.13	1.15	1.17	1.13	1.11	1.12
incentive	1.36	1.35	1.41	1.31	1.34	1.2	1.31	1.35
sales	2.26	2.48	2.25	2.18	1.57	2	2.16	2.25
assets	1.31	1.36	1.27	1.34	1.41	1.59	1.46	1.39
equity	2.55	2.48	2.54	2.65	1.75	2.31	2.64	2.8
Mean VIF	1.72	1.76	1.72	1.73	1.45	1.64	1.74	1.78

Appendix 8: Variance Inflation Factors – Chapter 4 – 2nd Research Issue

Equation (1) Variable	All 499 observations Non-deflated data	All 499 observations Deflated data
ln_salary	1.46	1.47
ln_stock	1.25	1.25
ln_bonus	1.21	1.21
ln_option	1.24	1.26
ln_other	1.28	1.3
firm_size	1.11	1.11
Mean VIF	1.26	1.27

Equation (2) Variable	All 499 observations Non-deflated data	All 499 observations Deflated data
social_dis	1.03	1.03
firm_size	1.01	1.01
yearDum	1.03	1.03
industryDum	1.04	1.04
Mean VIF	1.03	1.03

Appendix 9: Variance Inflation Factors – Chapter 5

Variable	Before crisis	Peak	Recovery	All 1,451 observations
social_dis	1.13	1.19	1.2	1.17
csr_reputation	1.02	1.01	1.01	1.01
in_director	1.06	1.09	1.07	1.06
incentive	1.37	1.39	1.3	1.34
assets	1.58	1.61	1.59	1.59
employee	1.48	1.45	1.42	1.44
industryDum	1.08	1.1	1.06	1.06
Mean VIF	1.25	1.26	1.24	1.24

Variable	Before crisis	Peak	Recovery	All 1,451 observations
gov_dis	1.07	1.14	1.12	1.11
assets	1.35	1.37	1.4	1.37
employee	1.39	1.41	1.35	1.38
industryDum	1.06	1.08	1.02	1.05
Mean VIF	1.22	1.25	1.22	1.22

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